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COLONIAL DOORWAYS FROM A LAYMAN'S STANDPOINT

BY CHARLES LYMAN SMITH

Illustrated by a series of doorways chronologically arranged and reproduced from photographs by the author

STIMULATED and inspired by excellent teachers, the writer in his early student days aspired to become an architect, and eagerly anticipated continuing his apparent inclinations along those lines by further courses at home and abroad. A stern New England parent of the old school, who considered dollars more desirable than the precarious prospects of an architect, and who looked askance at the caprices of the Beaux-Arts, Montmartre and the Latin Quarter, willed otherwise; and a long apprenticeship in an uncongenial business career resulted.

After years of patient plodding, interspersed with hurried trips to Europe, which strengthened and developed the old love, conditions brought about a leisure which sought gratification in the pursuit of a long cherished hobby,—the collection of photographs and data pertaining to domestic architecture of the early New England Colonies.

A. D. 1720
Buckminster House, Portsmouth, N. H.

With a boon companion on many a long hike, the vigor and charm of a perfect day spent in the open, the lure and pleasure in finding old houses redolent with memories of some stirring historical event or associated with a well known celebrity, the quest soon became a fascination not to be denied, and architectural features both old and new aroused the keenest interest.

In our native town of Boston, Bulfinch, of State House fame, has left many enduring examples of his genius. The so-called Beacon Hill section of the city is rich in fine old doorways, where one may study the fluted columns and pilasters with their Doric, Ionic and Corinthian capitals, classic pediment, and the ornamentation characteristic of the best Georgian façades. Henry James once termed Mount Vernon Street the happiest street scene our country could show, respectable in a degree unsurpassed among outward pomps.

The nearby suburbs still may boast of unique examples of the homes of forebears, while one need go no further than towns as easily accessible as Salem, Marblehead and Newburyport, not to mention others, to find perfect examples of the so-called Colonial style, from the early lean-to house to that of the square three story mansion of wood or brick.

The pursuit of any subject begets a craving for

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greater knowledge, and one soon finds himself eagerly seeking such sources of information as will give a keener understanding and larger enjoyment. Thus the horizon is continually broadening, and one is never satisfied until he acquires that which seems perhaps just beyond his reach.

Even for the layman, a certain knowledge of the development of domestic architecture is necessary to a true enjoyment of the subject, and we must study a few of its details.

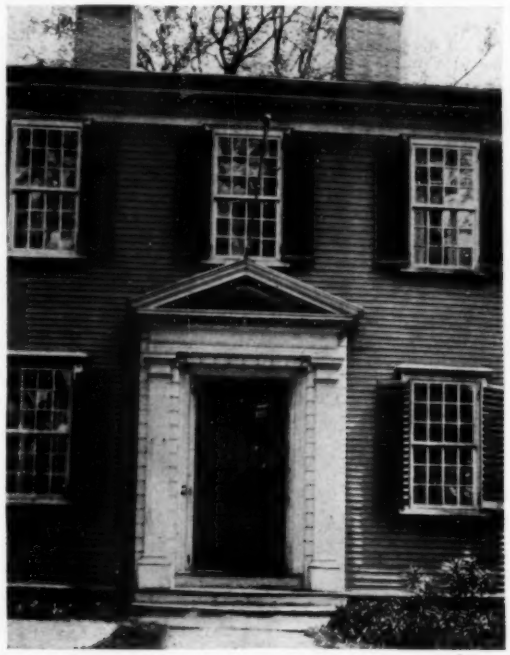
The New England Puritans, struggling for existence in a bleak and unknown wilderness, began building the log cabin as a protection from the weather and as security against the marauding Indians. As clearings were made and settlements appeared, the simple house with long sloping lean-to and gambrel roof of pre-Revolutionary days replaced the cruder cabin. Doorways were rudely framed, the doors primitively battened and bolted together without ornament save for the strap hinges of hand forged iron.

Oliver Wendell Holmes, apropos of this style of house, has said of his birthplace in Cambridge, Mass.,

> "Born in a house with a gambrel roof
> Standing still if you must have proof.
> Gambrel? Gambrel? Let me beg
> You'll look at a horse's hinder leg—
> First great angle above the hoof,—
> That's the gambrel; hence gambrel-roof."

As prosperity increased, owing to the flourishing East Indian and slave trade, many seaport towns of the colonies became centers where dwelt wealthy merchants and sea captains. These men were great factors in the progress of local and national affairs, and as their influence and position warranted they built for themselves and their children homes that reflect refinement and taste. These large, square, wooden mansions and those of more stately brick date roughly from about 1784 to 1818.

A. D. 1715
Dummer House, Byfield, Mass.



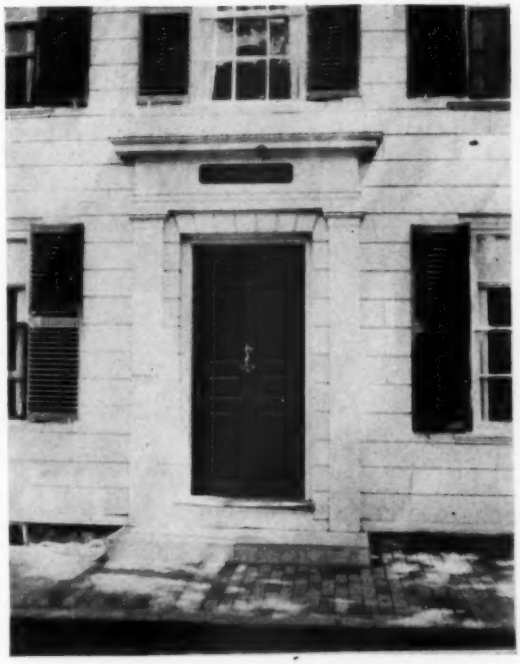
A. D. 1730
House in Bedford, Mass.

In England, where the court has largely dominated the nation, the Georges, who were German, uneducated, without taste and bourgeois to their fingertips, have given their name to the prevailing classic revival of architecture of that period known as Georgian, but in this country by the general term Colonial. The Georges were fortunate in having for contemporaries such men as Sir Christopher Wren, John Gibbs and Vanburgh among architects, and Grinling Gibbons, Chippendale and other exponents of the allied arts. These men knew the value of classic form, in fact, felt and adapted the styles of the Far East, as well as Greek and Roman, until one is bewildered by the many fine examples of their craftsmanship.

Our northern Colonists had fought their way to wealth, largely at the expense of education, and their homes reflect a free expression of their individuality. On the other hand, the cavaliers of the South were men of inherited wealth. Many of them had received their education in England, had profited by example and study to such a de-

A. D. 1732
Garden Doorway, Royall House, Bedford, Mass.

A. D. 1748
Old State House, Boston, Mass.



A. D. 1745
King Hooper Mansion, Marblehead, Mass.

A. D. 1760
Doorway, Wentworth Gardner Mansion, Portsmouth, N. H.

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gree that their homes are more elaborate and show the Georgian influence in many of its most elegant forms. Occasionally in New England, where wealth has been handed down from father to son, we have isolated examples of the southern type, with two storied columned porch, balconies from second story levels, ornate Palladian windows, carved cornice and mouldings.

When the larger square house of the merchant prince was built he wished some striking mark of his hospitality, so the builders added inviting porches of beautiful dimensions, ornamented by classic detail, leaded glass in fanlight and sidelight, and above, a finely proportioned Palladian window to harmonize and to light the stair landing within.

A. D. 1768
Col. Jeremiah Lee House, Marblehead, Mass.

These American doorways were worked out from the best prototypes in England and in Italy, with adaptations and changes suitable for wood construction. The best results are not copies, but have been obtained by thought and originality on the part of the builder, who had no actual data from which to work. Beautiful columns have been used in various forms, pediment pointed or arched, occasionally with scroll or broken arch with the pineapple set in as an emblem of hospitality. The wood carver, like the famous McIntire of Salem, Mass., was called in to embellish capital, architrave, and cornice with tracery of exquisite workmanship.

One cannot wander through these quaint New England towns, in their quiet dignity so eloquent of a glorious past, without being impressed by the charm which these classic doorways lend to an otherwise plain exterior. Most of the

A. D. 1782
Salem, Mass.

A. D. 1782
Assembly Hall, Salem, Mass.

A. D. 1782
Silsbee House, Salem, Mass.

A. D. 1789
Jacob Wendell House, Salem, Mass.

A. D. 1784
Gov. Langdon Mansion, Portsmouth, N. H.

A. D. 1790
Bradbury Spaulding House, Newburyport, Mass.

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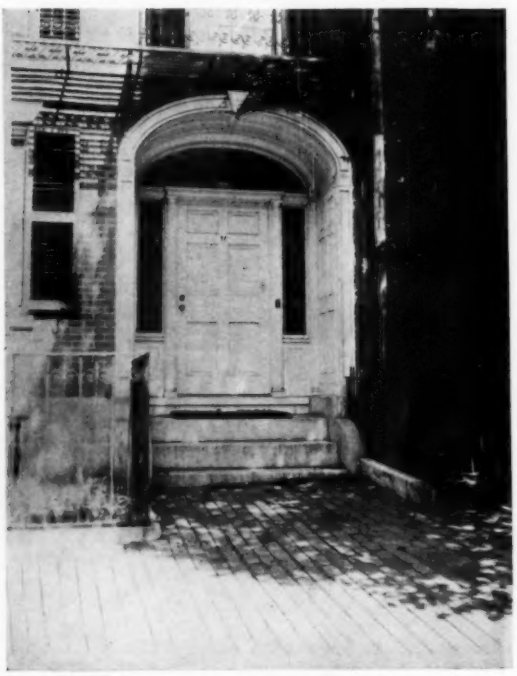
A. D. 1816
Providence, R. I.

A. D. 1816
Emmerton House, Salem, Mass.

A. D. 1811
Davis House, Newburyport, Mass.



A. D. 1816
A House on Chestnut St., Boston

porches were undoubtedly utilitarian, being added as shelter from the weather. Some are square, a few oblong, others semi-circular. In each case there is a harmony of proportion that seems to lend an air of refinement to the plan and reflects in a large measure the personality of the owner. In a general way the simplicity and barrenness of the Puritan characterize the early period, while later the influence of the architect from over seas is readily traced. Once the eye becomes accustomed to the purest styles it retains an impression of beauty, and the layman, though unable to distinguish the subtle difference in transition, becomes sensitive to the various forms and quite readily classifies the subject.

A. D. 1810
Doorway of a House in Bristol, R. I.

As time goes on these charming examples of early domestic architecture, stamped with the character of our forefathers, will become a source of permanent utility and inspiration. Under the shade of noble elms, that in earlier days looked

A. D. 1806
Gideon Tucker House, Salem, Mass.
Designed by Samuel McIntire

down upon many an historic scene, we may muse over the lessons of a memorable past and adapt them to the usages of the present day. Although the tabulated facts may become dusty and deranged, there still remains our book of prized photographs, as a stimulus to memories of oldtime courtesy, of glimpses of beautiful interiors with graceful stairways, carved mantel, panels and ceilings. But this opens up a vista into Colonial architecture upon which we may not venture. The silent power of recollection of many a weather-stained farmhouse nestling among the hills, or of a quiet, dignified mansion, mellowed by the slanting light of a late summer afternoon, is all pervading and leaves its indelible mark.

Someone has said that architecture is frozen music; the lines of perfect architecture making a harmony as overwhelming and irresistible in appeal as that made by the flowing rhythms of music.

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ARCHITECTURAL EDUCATION
A TEACHER'S VIEW

BY A. D. F. HAMLIN

Professor of Architecture, Columbia University

MR. BLACKALL'S very interesting article on architectural education raises many questions which he is not by any means alone in seeking to solve. These very questions are and have long been subjects of earnest consideration among the professors and instructors of our leading schools of architecture. In the annual meetings of the Association of Collegiate Schools of Architecture, in more informal meetings at the conventions of the Institute of Architects, in occasional discussions between individual instructors of different schools, and in the meetings of the faculties of the schools themselves, there has been for many years constant discussion of the proper relations between the schools and the offices; between the colleges with curricula leading to the Bachelor's degree—that is the schools of liberal culture—and the professional schools; between liberal culture and specialized technical training, and all the related and implied questions of educational relationship. It is proper here to remind practicing architects of a fact which many of them in their discussions of the subject seem to forget; viz., that all the leading Schools of Architecture are directed and mainly officered by architects in active practice. There is a mistaken impression, in some quarters, I think, that the University Schools of Architecture are conducted by dreamers and theorists who have little or no contact with the actualities of the profession, little sympathy with its practical needs and little understanding of the right purposes of professional training. I do not at all attribute this fanciful notion to Mr. Blackall, but it is more or less prevalent, although based on no evidence whatever; it is one of those mistaken impressions which lend themselves so easily to caricature and fault-finding that they keep on circulating in spite of repeated disproof.

In discussing such questions as these it is important to establish clear definitions. Exactly what does Mr. Blackall mean by "culture?" Reading his article through gives the impression that culture to him means little more than the ability to discriminate justly between the good and the bad, the artistic and the inferior, in architectural design and drawing. This is indeed one of the fruits of culture. the result of combined training and experience; but culture, as I think most teachers understand it, is a broader and more fundamental thing; it means that foundation and background of knowledge, experience and taste which comes only from familiar contact with great minds and great achievements, whether of the past or of the present. It is a shaping of the mind which opens to it many windows upon the world of thought and life, so that the man of culture engaged in a profession has a far broader horizon than that which bounds his immediate occupation. It is the aim of the collegiate schools of architecture to supplement the purely technical teaching, which Mr. Blackall calls "subjective"—with such scientific, mathematical and historical instruction, and with such a grounding in the theoretical principles upon which architecture is founded, both as an art and as a profession, as shall put the student in the way of acquiring a mastery of his art and profession, and give him a broad and sympathetic outlook upon other fields of life and knowledge than his own. We try to train the mind as well as the hand and eye; to stimulate the imagination as well as the perceptive faculty; to exercise the reason and to broaden the intellectual and aesthetic interest of the student. Mr. Blackall states our purpose correctly; we do try to train men who can become architects and not mere office draftsmen. Our conception of the place and function of the architect in the community and as a member of a great and noble profession and of architecture itself as one of the highest expressions of intellectual and æsthetic culture is possibly more idealistic than Mr. Blackall thinks it ought to be; but his report of his experience with the school trained men does not convince us that our purpose is wrong or our aim too high. We have doubtless fallen short, far short, of perfect success in our efforts; no one can be more conscious of our shortcomings than ourselves. But we are not yet persuaded that our scheme of education is fundamentally wrong.

II.

The conditions under which the collegiate and university schools of architecture have developed their curricula are in part responsible for the deficiencies which the professors of architecture themselves recognize in the results of their training. The schools have to deal with the material supplied them. In most of them the boys come directly from the high school; in a few, from colleges, after two to four years of collegiate studies. Hardly one among these young men ever knows how to draw; few of them have any artistic background, or any real conception of what archi-

tecture is. For several years Columbia tried to enforce an entrance requirement in free-hand drawing of simple ornament in outline, and some acquaintance with the orders of architecture; we were forced to cancel this requirement because neither the preparatory schools nor the colleges supplied this elementary training. The average entering student's profound ignorance of general history is astonishing. His lack of even the most elementary notions of the history of art is equally deplorable. Those who come from the colleges are, of course, better equipped in some respects; in mathematics, French, ability to express themselves intelligently in English, sometimes in habits of study and ability to reflect and reason; but these men though more mature too often suffer from having too late begun to interest themselves in architecture, and it takes some time for them to get into the true architectural spirit. And we can keep them only four years! We wish we could catch them younger and yet not less well grounded, and keep them longer!

In the Columbia school, to which none but students with at least two years of college credits are admitted, we are trying to accomplish this by starting the college student early in some of the elementary architectural studies. If we could order his two years of required collegiate pre-architectural study as we would like to he would come to his four years of purely professional study after two years of combined collegiate and elementary architectural training, with some real acquaintance with drawing and with the orders, shades and shadows and descriptive geometry, in addition to his French, mathematics, general history, English and economics. Then the four years in the school could be wholly devoted to design, advanced drawing, construction, architectural history, ornament and the decorative arts, theory, and elementary office practice—a large enough program, in all conscience, for four years, and approaching measurably to Mr. Blackall's suggested curriculum. But the prerequisite training above outlined as a desideratum has not yet been made possible.

As it is, with architecture the complex profession that it is, any curriculum must be a compromise. Many desirable things must be left out and attention and effort concentrated on those subjects which are most indespensable and which the schools are best qualified to teach. Everything else must be left to the offices, to the slow acquisitions of long experience. It takes years to train an architect. Neither the offices, nor the schools, nor experience, can alone complete this training.

III.

The crux of Mr. Blackall's criticism of our existing systems of architectural education seems to lie in the question of the proper division of the work of education between the offices and the schools. It is in his answer to this question that most of the professors of architecture, myself included, would part company with him. He would have us "give up the idea that the polishing necessary to real culture can be acquired in school better than it can be acquired in practice"—that is, in the office. Now, if the schools cannot, better than the offices, supply the training essential to real culture, then they have no function at all and might as well be given up. If the young student can acquire this "polish" in the offices of the architects who employ him, where he also acquires his practical experience why should he ever go to a school of architecture? What is there left for the schools to do? Mr. Blackall would confine their work to just three fields—drawing, history of architecture, aesthetics of construction and design. But what are these three if not cultural subjects, studies that stimulate the imagination, enlarge the powers of artistic expression, expand and enrich the mind?

In an earlier paragraph, however, he proposes that the applicant for admission to a school shall be "grounded in the elements of architectural history so that this work in its dry details shall be kept out of the curriculum."

I should like here to raise a query. Where and how is the applicant to obtain this grounding in the elements of architectural history? Certainly not in the offices, which do not care to employ ignorant beginners, and are not equipped to teach them the elements of architectural history if they did employ them. Certainly not in the preparatory schools; where can you find one that undertakes or is qualified to give this teaching? Mr. Blackall speaks of the "dry details" of the subject as being thus eliminated from the school course, and asks that the schools teach architectural history not as "archæology" or as "mere history," but as "applied architectural mechanics"; not in periods but "in relation to individual problems." I cannot of course speak for other schools except from general impressions, but I can speak of the course at Columbia from personal knowledge, and I am sure that for the past thirty years I have not taught architectural history as mere archæology, but have related it to the general history of civilization, to modern problems and to practical design, supplementing it, by the co-operation of the teachers of design, with problems in design to exercise the imagination in the application to practical requirements of the knowledge acquired from lectures and collateral reading and study. I have always insisted that the "periods" of architectural history are mere devices of convenience to aid us in grasping the significance of the whole impressive onward course of the stream of architectural progress, inseparably related to and always expressing the ideals and the culture of the age, and I have

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sought to make the students acquainted with and interested in the great masterpieces of the art. I have reason to believe that this is the aim and, with differences of detail the method, of the teaching in most or all of our leading schools.

IV.

Mr. Blackall finds that the schools do not teach their students to draw; their graduates have acquired no freedom and mastery of artistic expression. There is truth in this charge, though possibly the deficiency may be less serious than Mr. Blackall thinks it to be. The schools are doing their best to teach their students to draw, but here again we come up against the two great obstacles already mentioned: the deplorable lack of early training in drawing before entrance into the school, and the lack of sufficient hours and years of practice in the four years of the average course.* If Mr. Blackall or any one else can show us the way out of these difficulties and find time for a lot more of practice in drawing without the sacrifice of other essential things, he will relieve us of a problem which is our constant and anxious pre-occupation. I doubt, however, whether results can be greatly improved until drawing is more officially taught in all secondary schools and made a required study in all colleges.

V.

Finally: Mr. Blackall does not want, and says the architects "do not want, potential architects, but we want draftsmen first, and it is our job to make architects out of them." Well then, if that is the case, why do you look to the collegiate schools at all for draftsmen? Why not draw exclusively upon the "subjective" schools? Is it *your* job to make architects out of draftsmen and not equally the job of the collegiate schools? Do you not, on the whole, convert draftsmen into architects, if at all, much more rapidly and satisfactorily when they have been through a collegiate or "objective" school? Do not your "objectively" trained draftsmen, as a rule, advance more rapidly and to higher positions than those with only a "subjective" training?

May I be pardoned for expressing some doubt as to whether many architects do really and seriously consider it "their job" to make architects out of their draftsmen? I doubt very much whether any great number among them devote much time and thought to this altruistic function of teaching their draftsmen, of cultivating their imagination, their powers of observation and expression, their mastery of fundamental theory, their acquaintance with the masterpieces of their art, and I can hardly believe that all architects are averse to employing potential architects as draftsmen or reluctant to take on men who, though it takes them some time at first to acquire familiarity with office methods, thereafter show higher competence than the more immediately available men who have not had the higher architectural schooling. Certainly the schools should consider their duty to the aspiring potential architect as at least equally important with that of serving as employment bureaus for the architects' offices. The overwhelming proportion of school trained men among the higher and highest ranks of the profession proves that the schools have not failed in what they believe to be their true function.

The school cannot impart culture; it can provide the opportunities and means and favoring environment for its acquisition by the student: for the beginnings of a process which will continue in the school of experience. The school cannot teach imagination nor bestow taste; it can supply the suggestions and stimulus, the instruction and criticism which will foster and help develop these in the student who possesses them in the germ. It cannot teach many things which are better learned by actual practice in the office, but it can impart the elements and fundamental notions even of these, as some schools do, with considerable success. Culture, taste, imagination, skill in drawing, familiarity with practical details, these the student must acquire for himself, and it takes long years to master them. The professional school can help him to these in part: the office and the hard school of experience can help him in part. Each of these three kinds of schooling is necessary before the young man can claim to be a competently trained architect.

And now, when all this is said, what is the conclusion? Why, simply this, that Mr. Blackall's ideas and mine—and I think I may say, those of most of the professors of architecture—despite some differences of definition, of emphasis and of detail, are not nearly so far apart as they seemed at first!

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* *The duration of the course at Columbia is indeterminate; the "intellectual lockstep" of rigid division of the students and their studies into classes by years was long ago abolished.*

ARCHITECTURAL EDUCATION

PART II—THE OFFICE

BY C. H. BLACKALL, F. A. I. A.

UP to less than two generations ago the only architectural education available for the student was that afforded by offices, or something corresponding thereto. In the great creative periods of architecture this was enough, and it surely produced some marvelous results, not wholly, of course, due to the simple system employed, but more probably because of the fact that the system was part of the resulting architecture, and the student grew up inevitably in the footsteps of his master and was able to hand down the principles unbroken to his successors. The schools for teaching architecture as such have not been going long enough to demonstrate that they are all that their best friends claim for them, but no one could deny that as an adjunct of the office, it is possible for them to meet a very important function. Our danger in the past and for the future lies in the fact that we are apt to think the schools will do it all and the offices have no obligation in the matter, whereas the real burden of architectural education rests not upon the schools but upon the offices. The more practicing architects can appreciate this and give of their very best to the young men, treating them as apprentices, as equals and as successors, rather than as mere draughtsmen, the more surely will we be able to develop real architecture. An institution never developed a school of architecture in the broad sense, and even in this country where schools have taken so prominent a part, the real growth of the last twenty-five years has been through the office. One has only to consider the career and the influence of McKim, Mead & White to see how true this statement is. Probably no other one firm has had such influence on the young men as has been exercised by the organization which bears this name, an organization which was so coherent and united in its aims and methods that the death of two of the principals has not brought any perceptible change in the character of the output, and the young men who have graduated from this office and risen to honors and opportunities in the profession, are scattered over the whole country and afford unquestioned proof that this office is a real training field for the young architect. American architecture is singularly coherent. We have sporadic attempts at various styles, but after all, the general trend is here more consistently along the lines of the development which McKim and his associates have made possible, than in any other country. Even France with all its traditions and atelier system is no more consistent in its architectural development than we have been during the past twenty-five years. For that matter it might almost be carried back further in time, for our Colonial architecture, limited and meager as it was, presented many of the marks of a definite, spontaneous application of the right principles to architecture, and in those days there was absolutely nothing but a very meager assortment of books and a few architects who were quite lost in the Colonies.

The position of the architect then should be, and in most cases now is, that he holds a position of trust to his draughtsmen, that they are not mere cogs of the machine, but must be considered as potential architects who are looking to him to receive their inspirations and to develop into that indefinite capacity which we call architecture; that no matter how well they may have been trained in the schools, and no matter how intelligently the schools may have tried to inculcate the spirit of architecture in the young mind, they never in practice get such spirit there, but must look to the office, so that the office experience is properly the post graduate course which every architect must take. We see occasional instances of men who have come out from college, sometimes supplementing by a course in Paris, and have, through the kindness of their friends, been able to bloom out as full fledged architects, but it would be difficult to cite any such man, who having dispensed with the post graduate office course, has made a decided success as an architect, except at great pains to himself and a great loss of time. Architecture is so emphatically an objective art, and so dependent upon point of view for its expression, that it is too much to hope for complete preparation other than by the actual doing of the work.

It must not be assumed that because McKim, Mead & White have had so many and distinguished graduates, the younger practitioners have not an equal responsibility. The principles which make good architecture are not confined to large, expensive buildings, nor to elaborately organized groups of men. They are as old as the pyramids and as simple as a Greek vase. Some men will learn more in a small office. Some will need the stimulus of the keen competition in a large one, but in all offices there is opportunity for the architect to pay his debt to the world and to his pro-

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fession. Nor is it a question of style, nor character of work, but it principally has to do with enthusiasm, point of view and absolute sincerity in what is done. The best hope of our profession in the future lies not in the schools but in the young men whom we are trying to train, and in the reflex action on us who are called upon to lead the way for them. So long as we welcome the young men, take them into our architectural life and show them how we ourselves would face definite problems, just so long will architecture with us continue to be virile and strong and free from mere affectation. We need the young men around us to keep fresh and vigorous. We need the constant stimulus to our own imagination which comes with trying to be honest with those who are trying to learn from us, and look at the problems as they are and not as some school tries to say they should be, so that while we owe a debt to the young men which we must repay in kind, we get far more than we give when we take them in with us and make them our helpers. The School in the broad sense is never the result of one man's work, but it is the collective sum of the aims which are shared by many minds approaching the subject from different angles and all reaching a harmonious output.

Just think for a moment how greatly the outlook of the architect is increased by the knowledge that he is responsible for the post graduate development of these young men. Doubtless all architects do not accept this point of view. Some drive their men as factory operators, some have no thought or care for anything except the money returns, many are selfish and unthoughtful of the charges committed to them, but in the main it is a fact that the architects of this country are interested in the young men far more than the young men appreciate at times. The architect who does not face this responsibility is generally without books, with few subscriptions to magazines, with little interest outside of his four walls, taking a slight part in civic affairs, not an all round man, but a narrow, restricted person who has gone into architecture because it was the means of making a living. But the architect who is really alive to his duties, encourages his young men to use his books, and he has all he can afford to buy of them and then some more. He is interested not only in the tasks that the office presents, but also in side issues such as competitions in the Architectural Club, and he should further, and I believe generally does, strive to encourage the young men on lines which have not wholly to do with the business of architecture:—to foster personal artistry, to encourage individual hobbies outside of the office, to incite to the aesthetic point of view. If a man shows a willingness for water colors, or for poetry, or for music, for old laces or delicate embroideries, for anything that is beautiful and uplifting, the architect, if he is wise, will do all he can to make his boys feel that that is a part of their own development and continuation of the culture which was begun in the architectural school.

Now these are not mere retrospective factors, they are the real substance of architectural practice, and without them a man gets out of touch with growth and progress, while with them, life is a constant joy and a constant opportunity to be of some real service in the world and to pass along the light to the coming generation. And this idealized co-operation between the practicing architect and his assistants means growth in architecture, for in his efforts to encourage the young men, the architect cannot but grow himself, and the mutual result will be far better because of the association. Sometimes we meet a peculiarly favored architect who seems to be able to do all his work and loves to have his hand and his personal imprint not merely upon an office, but upon everything that goes out from that office, and he consequently employs very few men, preferably wanting to do it all himself and feeling a moral obligation to be his own draughtsman. There are other men who feel that their chief function is directing a group of bright, earnest, eager men; that they are serving their clients and the profession best when they do very little real drawing, but gather around them the best of the rising generation and strive to make that generation better and to raise the whole standards for the generation to come. This last seems to have been the point of view of McKim—it is the point of view which always produces real architecture, whereas the individual type tends to hardness, selfishness and aesthetic construction. Architectural practice in America has been almost forced into the associational group plan because of the complexity of the problems which we have had to meet, but this very condition has turned out for the best and for the broad, hopeful development which we think American architecture represents today.

The obligations are not alone on the employer. The young men have a certain duty which is involved in their choice of where they will work. It is not enough merely to get a job. Each young man fresh from college should exercise a process of choice, throwing out of consideration the architects who are in business only for what they can make in it, throwing out the men whose equipment is deficient, throwing out the men whose personality does not lend itself to comradeship, and throwing out absolutely the architect who runs his office like a mill. If the young men instead of trying to find out what architects are busy and are likely to give them a job, would make the first requirement that they will try for the office where they feel they can grow, it would be a splendid thing for the profession and for the

(*Concluded on page* 217)

·EDITORIAL·COMMENT·

THE REVEREND DR. E. C. PEARCE, Vice-Chancellor of the University of Cambridge, while moving a vote of thanks to President Paul Waterhouse of the R. I. B. A. stated:

You may know that we have a lusty bantling at Cambridge University, the School of Architecture. We are trying to do what we can to give education in architecture, which I hope is not vocational. I am out against vocational education. I remember that, during the war, I was called upon to attend a Conference of Colonial and Home Universities, and in the course of the proceedings it fell to my lot to defend Home Universities against the attack which was being made upon them by our Colonial brethren. I need not say what the attack was, but the burden of my remarks was chiefly this: that Cambridge—and I suppose I can speak for Oxford too—is not a place where you go to lectures, and it is not a place where you profess to learn anything, least of all how to dodge examiners; but Cambridge is a place where you live for three years. And that, bluntly put, means that education there is not vocational, that the great education you derive is how to deal with your fellow man. I imagine that for an architectural school it is of the utmost importance not only to be able to build buildings, but to know how to deal with clients who order them. That is one of the things we are trying to teach.

Doctor Pearce might have as logically stressed the further necessity for knowing how to deal with contractors and all the many and intricate business elements that enter into modern architectural education.

* * *

OF ALL ARTISTS THE ARCHITECT alone is subject to the dominating rule of accuracy. His plans are dictated instructions in a common language understood alike by the creative artist and the skilled artizan. They must be drawn with mathematical exactness. His sense of artistic freedom, poetic license if this term is preferred, may have expression in his design yet here it is restrained by the necessity for holding to the lines of force existent within the frame of the structure. In this respect he is in like condition with the sculptor, and the artist who draws the living form, for the beauty of their work depends entirely upon their knowledge of anatomy and the ability to portray it.

The media employed by the architect in the creation of his vision are the pigments of the painter, the fabrics of the weaver and the spinner, the clay of the potter, the marble of the sculptor, the stones of the mason, the metals of the skilled smith; combined with the skill of the artist, the sympathetic understanding of the scholar and—last, but not least—unswerving obedience to laws expressed in the mathematical exactness of the formulas of applied science.

Not alone in the drawings must tendency to poetic license be curbed, but in the no less essential item, the specification, must the architect observe restraint. Specifications are fine examples of prose writing wherein ideas are expressed in the fewest number of words, in language comprehendible alike to client and artizan, for the purpose of keeping the cost within imposed limits while carrying out the ideas expressed in the drawings; but, the writer may not, like the man who writes good prose, indulge in flights of fancy nor deviate one hair's breadth from the straight and confined path leading directly to his goal. Accuracy, incisive statement, absence of all confusion of thought, all vagueness of expression, are outstanding in good specifications, as they are in well executed drawings of well designed and well planned structures.

In some respects specifications recently written for comment show weakness. The designers provided for certain utilities in the plans and left to the specification writer the task of so describing the items that, out of a number on the market, one would be selected and installed. Procrastination, that insidious fault and unpardonable sin, alone prevented the specification writer from producing work of a standard comparable to the work of the draftsman. The specification did not specify but left to future determination the type of fixture to be installed. Accuracy imposed upon and faithfully followed by the artist, as evidenced by restrained expression, was side-stepped by the one man who, least of all is supposed to be influenced by, or to have any cause to exercise, poetic license. A building is not complete until it is complete in every detail and this involves the determination of all debatable points at some time. The proper time is when the plans are under way and calm reflection is ruling, before contracts are let and hurry and bustle of construction begin. "My father," said an architect, "made me when a boy saw cord wood to keep the home fires burning. He insisted upon the largest and knottiest pieces being taken care of first, saying that by following this rule the work became easier and more agreeable with the passing weeks. Throughout my life his good sense has been demonstrated in my work, for my first decisions are always those most difficult to make and most alluring to leave until later. These decisions are made after careful consideration and are never changed. I have yet to hear people complain that I am arbitrary."

XUM

THE PRESENT BEWILDERMENT IN the construction industry is paralleled by similar conditions existing in other lines of industry, with the difference that the construction industry is slower in evolving a solution. The reason, as was so ably stated by Ernest T. Trigg, president of the National Association of Construction Industries in his recent address before the National Association of Builders Exchanges, is lack of co-operation and, indeed, lack of knowledge as to the kind and amount of co-operation needed.

The construction industry is composed of non-associated units of nomadic manufacturing plants. Each contractor is a peripatetic manufacturer, each contract a plant of limited output. The demand on each unit is uncertain and only by considering the industry as a whole will it be possible to accomplish the many things necessary to be accomplished if the construction industry is to function as other industries bid fair to be functioning as soon as winter is fairly over.

Mr. Trigg believes much of what was called co-operation in a period of rising prices may well be abandoned, at least so much as consisted in regulation of prices and limitation of output and competition. He believes that during a period of falling prices, such as the country seems to be facing, co-operation should be centered on the following few essentials;

Statistics of all kinds; a study of what they mean and how they properly may be utilized:

Transportation; an item that affects all industries but none so much as the construction industry in which materials actually entitled to a bulk rate as raw materials pay rates as manufactured materials:

Legislation; co-operation between contractors, construction labor, architects and engineers is necessary to keep the public from initiating legislation affecting the construction industry:

Finances; co-operation on this point must bring in the bankers as of equal importance with workmen and contractors in smoothing curves of statistics affecting construction, both as to costs and volume:

Standardization; co-operation here will cover training of artizans, shifting of dis-engaged labor from firm to firm and job to job, reducing crises due to unemployment, standardization of details of machines, sizes and quality of units of materials, etc.

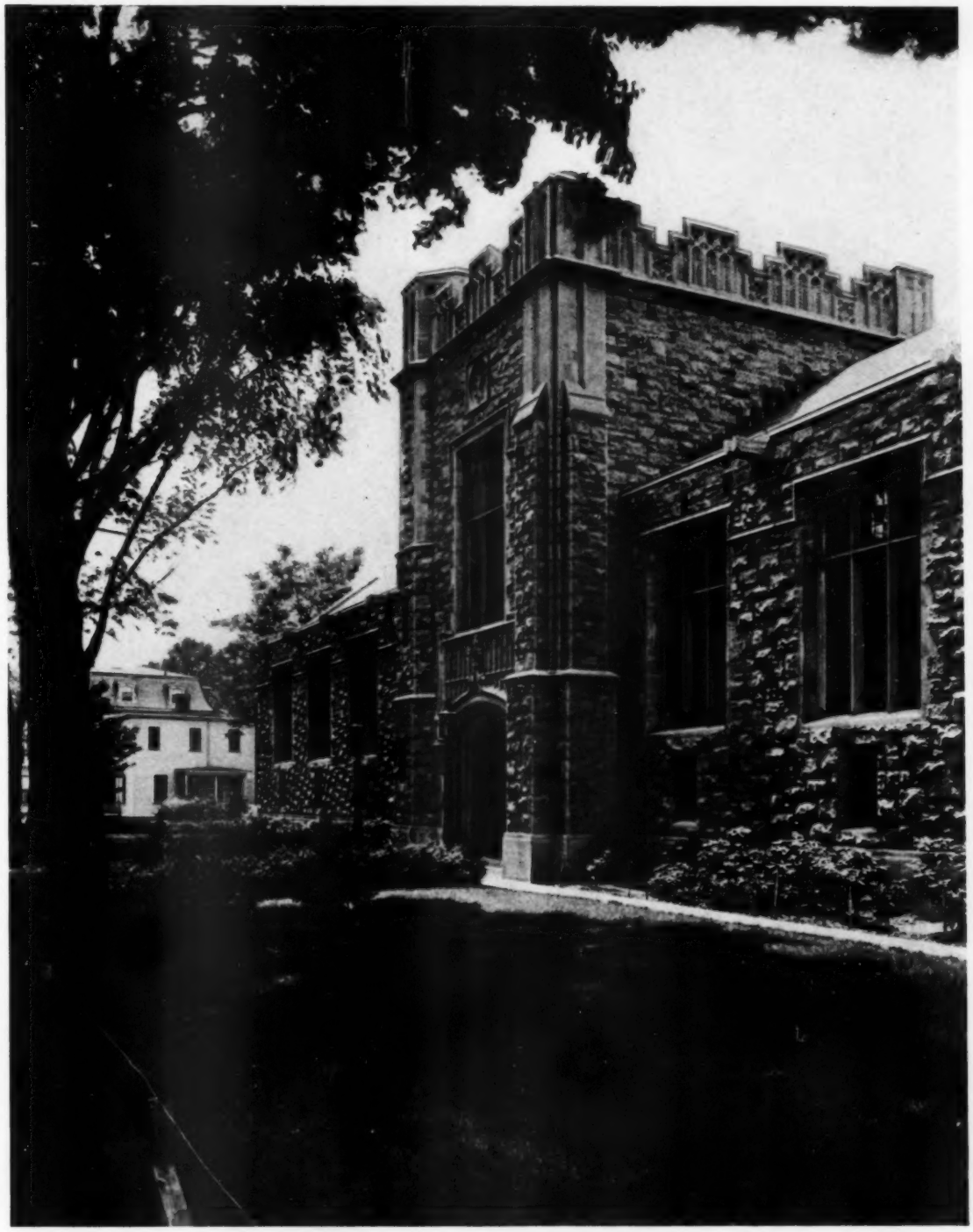
Co-operation does not imply combination, the latter word covering, but not effectually hiding, a multitude of sins, but it means getting together in a right spirit earnestly to search for solutions of many wrongs that beset the industry. At present no real knowledge of them is had; suspicions only are in evidence.

House at Chipping Camden, England
(From a Photograph by Robert M. Blackall)

MORRISTOWN FREE LIBRARY, MORRISTOWN, N. J.

EDW. L. TILTON, ARCHITECT

(See page 223 for floor plans)



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EDW. L. TILTON, ARCHITECT

(See page 223 for floor plans)

XUM

MORRISTOWN FREE LIBRARY, MORRISTOWN, N. J.

EDW. L. TILTON, ARCHITECT

(See page 223 for floor plans)

ROOM IN BUILDING OF NEW YORK CHAMBER OF COMMERCE

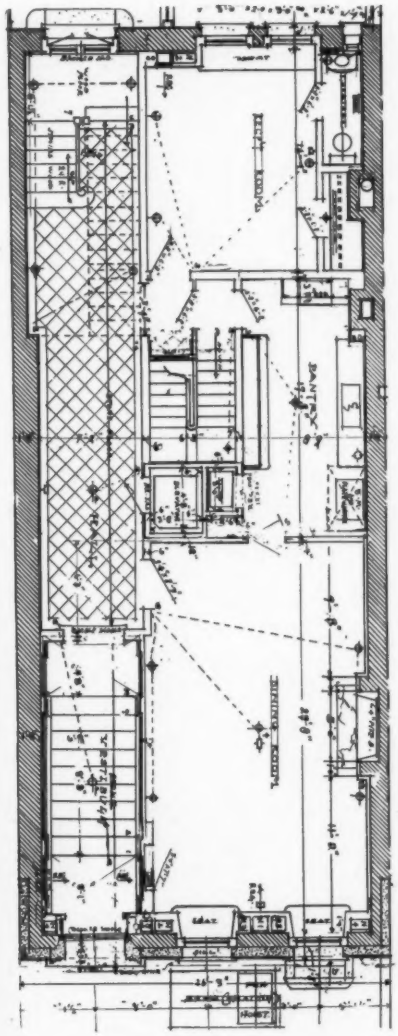
HELMLE & CORBETT, ARCHITECTS

XUM

ROOMS IN BUILDING OF NEW YORK CHAMBER OF COMMERCE

HELMLE & CORBETT, ARCHITECTS

XUM



FIRST FLOOR

HOUSE OF
MATTHEW A. WILKS, ESQ.,
NO. 7 W. 81ST STREET,
NEW YORK

A. L. HARMON, ARCHITECT

(For additional floor plans see page 222)

XUM

DETAIL OF MANTEL

HOUSE OF MATTHEW A. WILKS, ESQ., NO. 7 WEST 81ST STREET, NEW YORK

A. L. HARMON, ARCHITECT

XUM

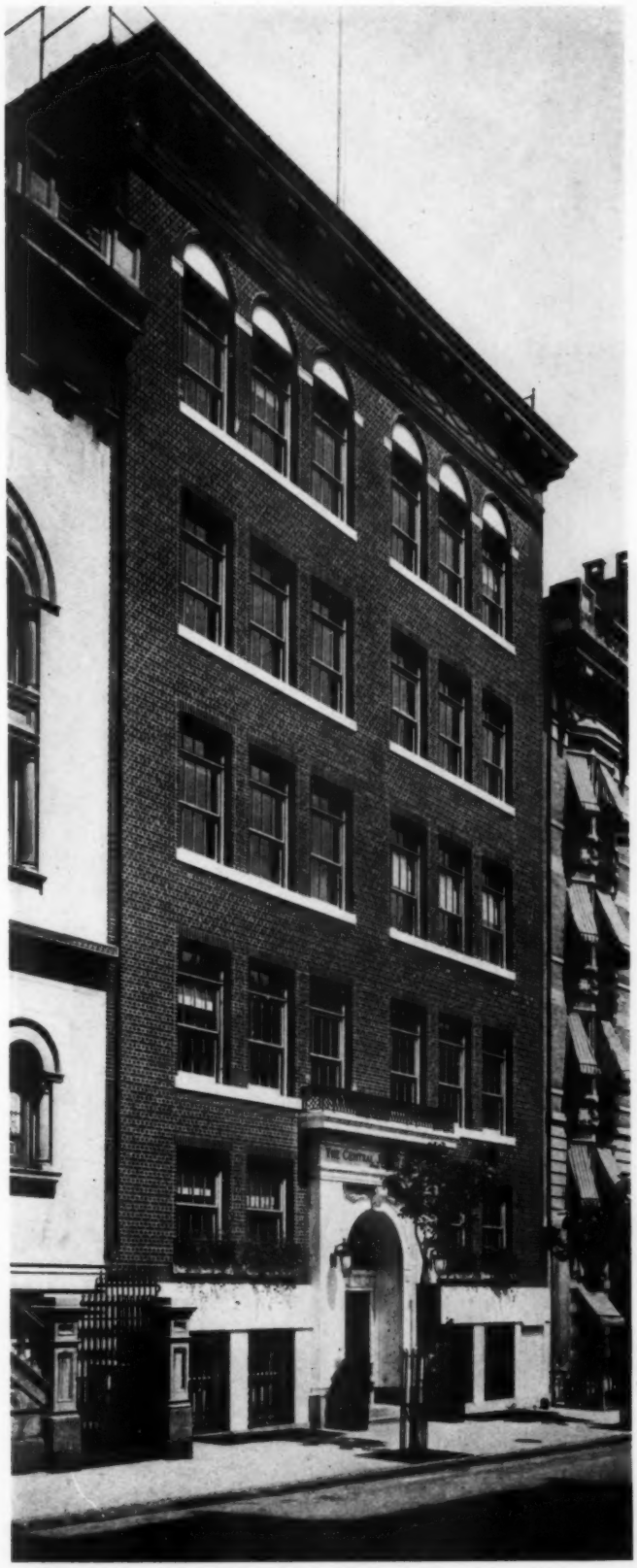
XUM

DETAIL OF MANTEL

HOUSE OF MATTHEW A. WILKS, ESQ., NO. 7 WEST 81ST STREET, NEW YORK

A. L. HARMON, ARCHITECT

XUM



CENTRAL JEWISH INSTITUTE, EAST 85TH STREET, NEW YORK

BENJAMIN W. LEVITAN, ARCHITECT

XUM

DETAIL OF PRINCIPAL ENTRANCE

CENTRAL JEWISH INSTITUTE, EAST 85TH STREET, NEW YORK

BENJAMIN W. LEVITAN, ARCHITECT

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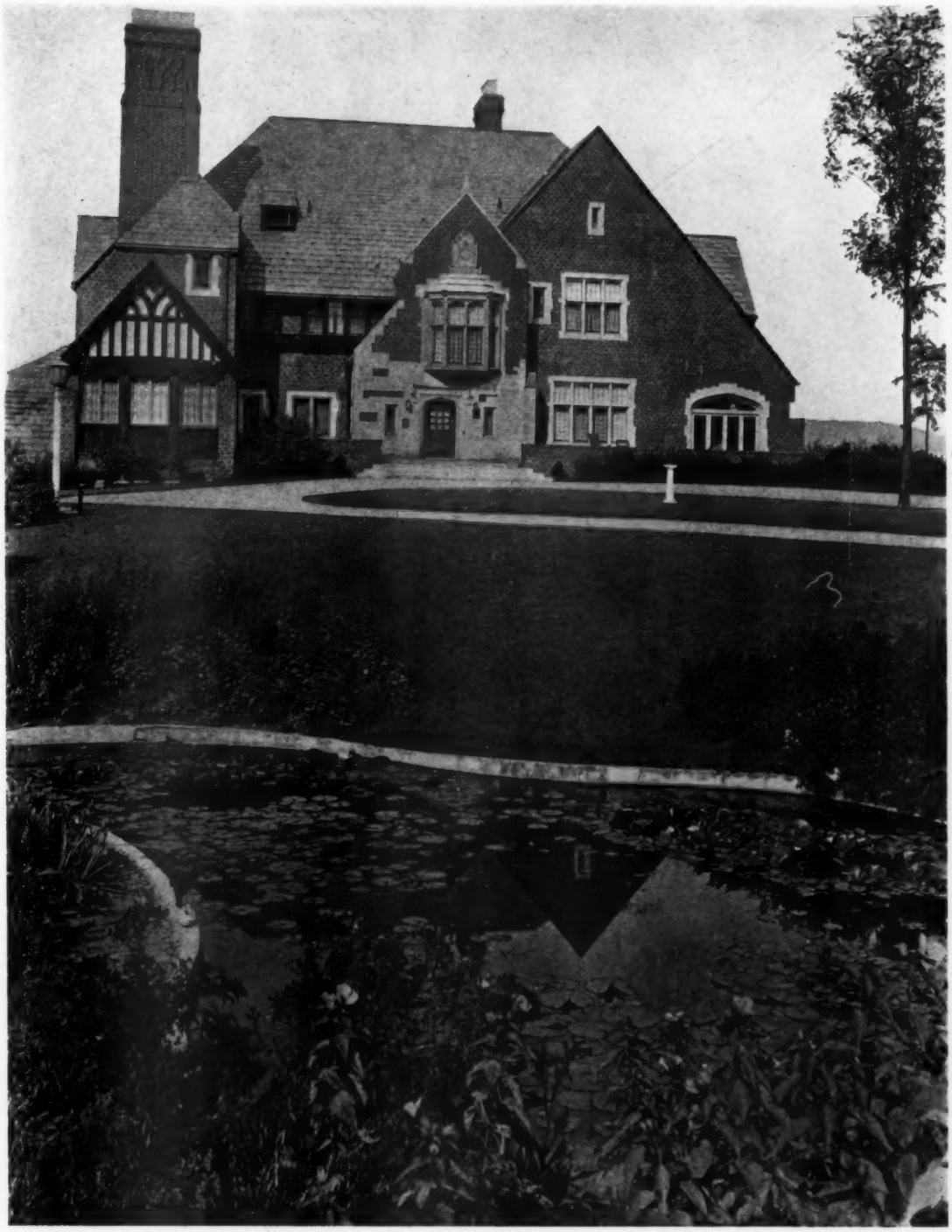


HOUSE OF W. D. PACKARD, ESQ., CHAUTAUQUA, N. Y.

WARREN & WETMORE, ARCHITECTS

XUM

EXTERIOR DETAIL

HOUSE OF W. D. PACKARD, ESQ., CHAUTAUQUA, N. Y.

WARREN & WETMORE, ARCHITECTS

XUM

XUM

VOL. CXXI, NO. 2389

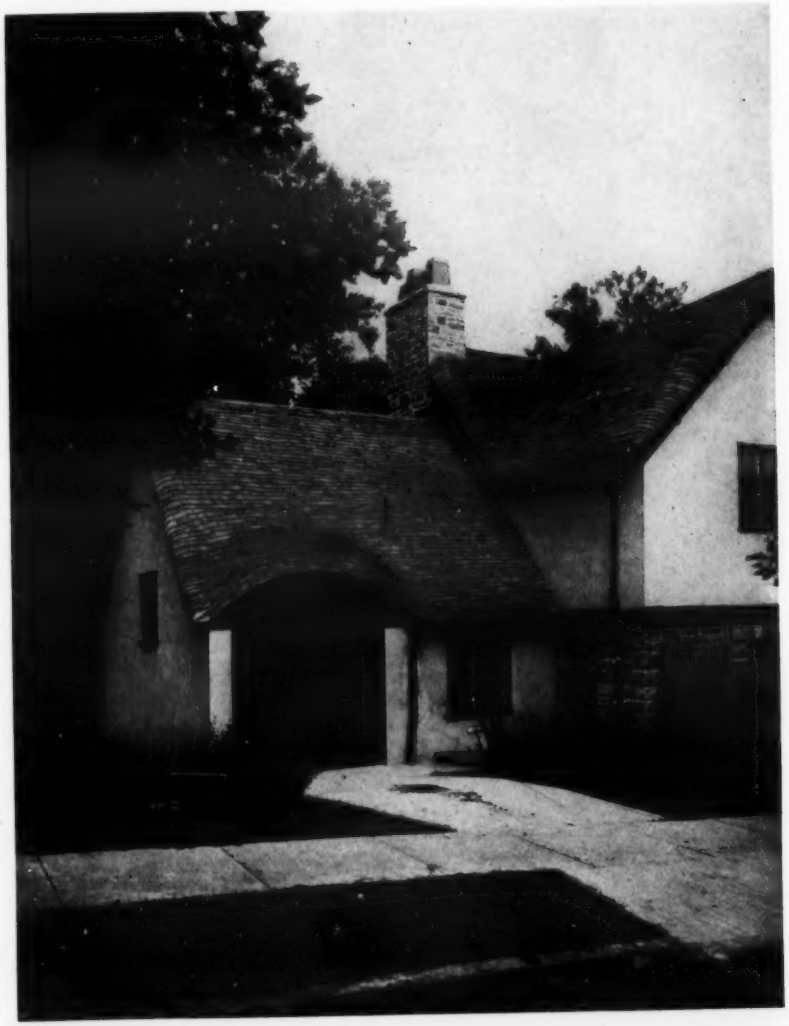
MARCH 15, 1922

HOUSE OF FREDERICK SUTHERLAND, ESQ., RIVERDALE, N. Y.

CLARENCE W. BRAZER, ARCHITECT

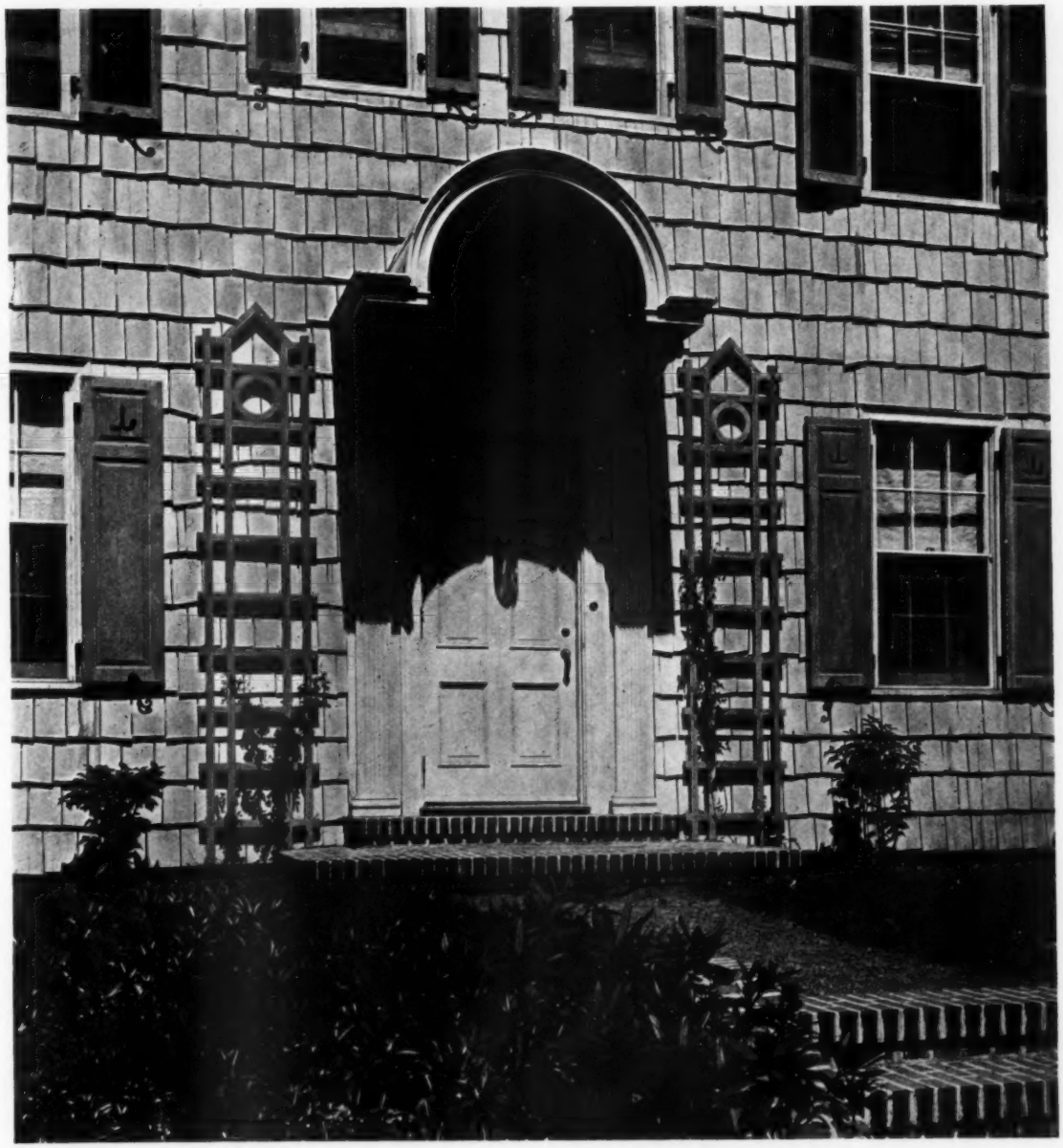
VOL. CXXI, NO. 2389

MARCH 15, 1922



HOUSE OF FREDERICK SUTHERLAND, ESQ., RIVERDALE, N. Y.

CLARENCE W. BRAZER, ARCHITECT



ENTRANCE DETAIL, HOUSE OF REGINALD E. MARSH, ESQ., BRONXVILLE, N. Y.

TOOKER AND MARSH, ARCHITECTS

XUM

ENTRANCE DETAIL OF A HOUSE AT BRONXVILLE, N. Y.

TOOKER AND MARSH, ARCHITECTS

XUM

Architectural Education

(*Continued from page* 214)

young men, and would go a long way towards hastening the probational period, which we must all go through. The office is the inevitable and logical successor to the school. It is the focus from which inspiration starts and spreads. The young men on their part must choose wisely, and the architects on theirs must give freely and intelligently.

And given a right kind of training in the schools so the young man as he comes to the architect is able to fit at once into this elaborate machine; and given the young man's desire and intention to be something in his profession; and given further the willingness of the architect himself to take the young man into his architectural heart and life—with these three conditions, the future of architectural education can offer nothing but a most brilliant promise for the country.

A Communication from Cass Gilbert*

The Editors, The American Architect.

I HAVE only recently received a printed circular entitled "Report by an Investigating Committee of Architects and Engineers on Quantity Surveys as furnished by the Quantity Survey Company, Inc.," in which is reproduced the report and recommendations of a joint committee representing the American Institute of Architects, American Engineering Council of the Federated Engineering Societies, and Associated General Contractors of America.

I would like to point out that whatever the merits or demerits of the Quantity Survey System may be, that if it is put in operation the Owner will expect the Architect to pay for the survey. The Institute Schedule of Practice and Charges for many years has assumed that the Owner would pay for the services of engineers and various experts, traveling expenses, additional compensation when absent on trips, an increase above the minimum of six per cent for special interior decoration, furniture, etc., and for buildings of greater elaboration and in many cases such agreements are made by the Owner, but in the present tendency of practice it is increasingly difficult to make agreements with Owners, especially committees and public bodies, to this end.

The Architect is constantly asked to include in his minimum charge of six per cent, the cost of special experts for mechanical, sanitary and electrical equipment and other special items. The minimum fee of six per cent is consequently looked upon as the maximum fee upon which basis he is sometimes asked to divide his fee with a local associate as in the case of the recent Richmond Memorial Building, and to concede traveling expenses and salary of the clerk of the work or local superintendent, also cost of duplicating blueprints for estimating purposes and it is with the greatest difficulty that clients can be brought to see that all of such items are legitimate and proper charges.

Frankness with ourselves compels us to recognize that many of the most eminent and distinguished architects as well as many of the lesser architects in the country make concessions on these points in a spirit of competition for business which is foreign to the professional ethics so much to be desired.

If the Quantity Survey System is adopted it is inevitable that the Client will say in substance "Mr. Architect didn't you agree to perform all of the professional services necessary for this operation, if so, is not an estimate of the cost necessary to inform yourself if not me, how far this operation can go within the appropriation I have named and if this is so why should not you furnish me with the best available estimate,"—or the Committee will say "Mr. Architect, this is a State Capitol Building which will cost $7,000,000.00, your fee on this work at six per cent is $420,000.-00, you can well afford to include this little item of Quantity Survey and absorb it within your fee; Messrs. Blank and Blank have tentatively agreed to do so if they are appointed and there is nothing in your Institute Schedule of Charges to forbid you doing it. Take the minimum amount of one-quarter of one per cent—it will only be $17,000.-00," and thus step by step another tax, not only of money but of responsibility, is laid upon the already burdened profession of Architecture. I am aware that it is not proposed that the architects shall pay for the Quantity Survey, not now, but they will—later on.

The Quantity Survey has not proved to be a success in England. It has tended to lessen rather than to increase the architect's standing in relation to his work, however convenient it may be for the builder and however helpful for the Owner. I believe that it has been a cause of controversy and litigation more often than a means of adjustment and if it is adopted in this country the architects will, in my opinion, pay for it. If the Owners or builders want the Quantity Survey let them promote it and pay for it.

The architects just now seem rather in the mood to try experiments on themselves. We have had a rather extended experiment in licensing architects, for instance, which still seems to be a fashion, or an epidemic, which has resulted in laying quite a heavy monetary tax for license fees upon the architects without bettering anything so far as visible.

I hope that the architects will go very slow about making this experiment.

CASS GILBERT.

**Editorial Note. The main question involved in the above communication is the determination of the real character of the service architects should render to their clients. As to who should pay the charges for a quantity survey, the client or the architect, is, we believe, entirely outside of the present discussion.*

Are the safeguards which a quantity survey affords, an advantage to the client? Does the accuracy of a quantity survey make it possible for architects to render better service?

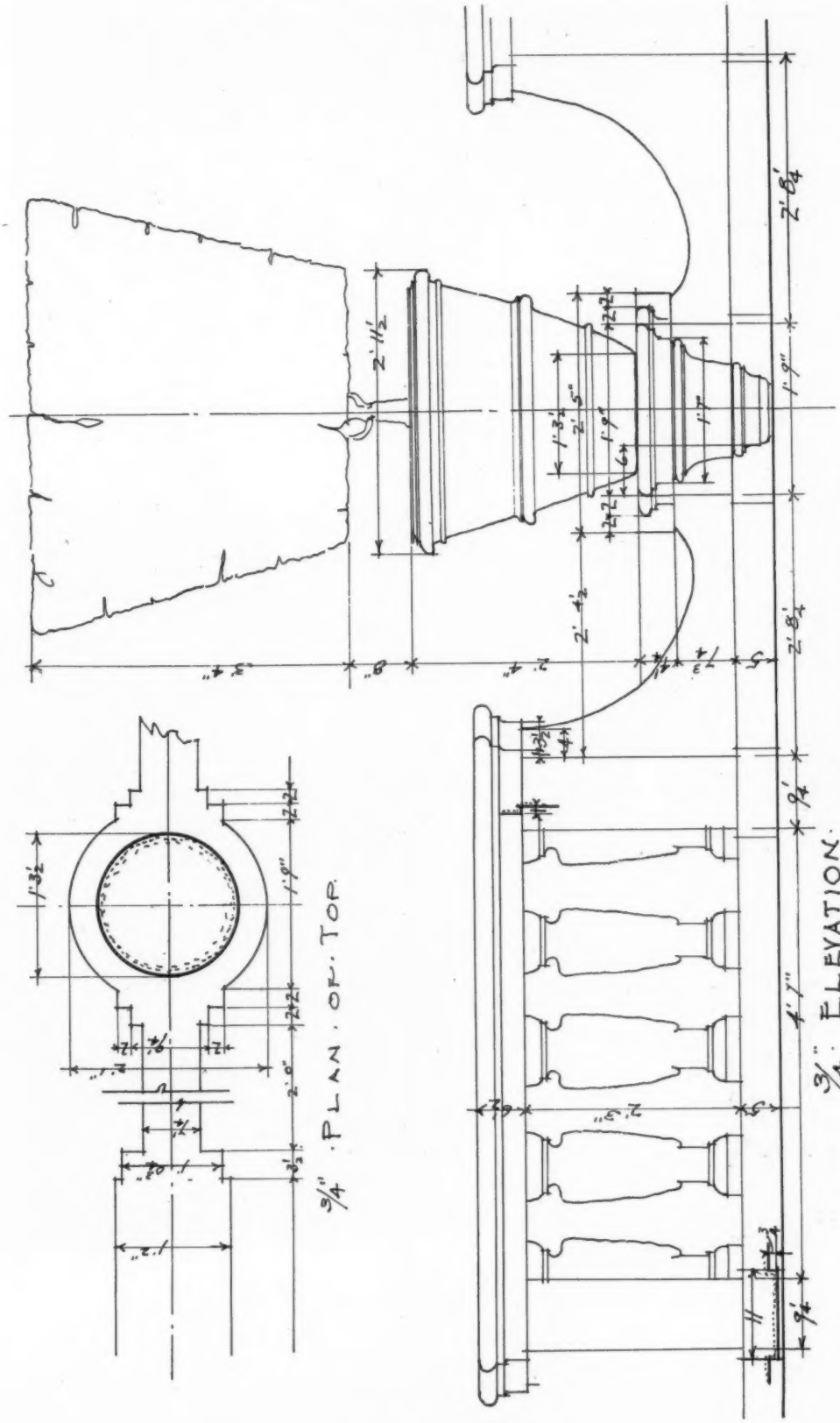
It would seem that any architect who has a demonstrated ability for competency, need have no fear in suggesting to his client the many safeguards which a quantity survey affords, or insisting that the client should bear the expense of a comparatively small charge which so thoroughly guarantees the best construction of his building, at the least cost consistent with its character and the existing conditions.

XUM

MEASURED AND DRAWN BY ROBERT M. BLACKALL

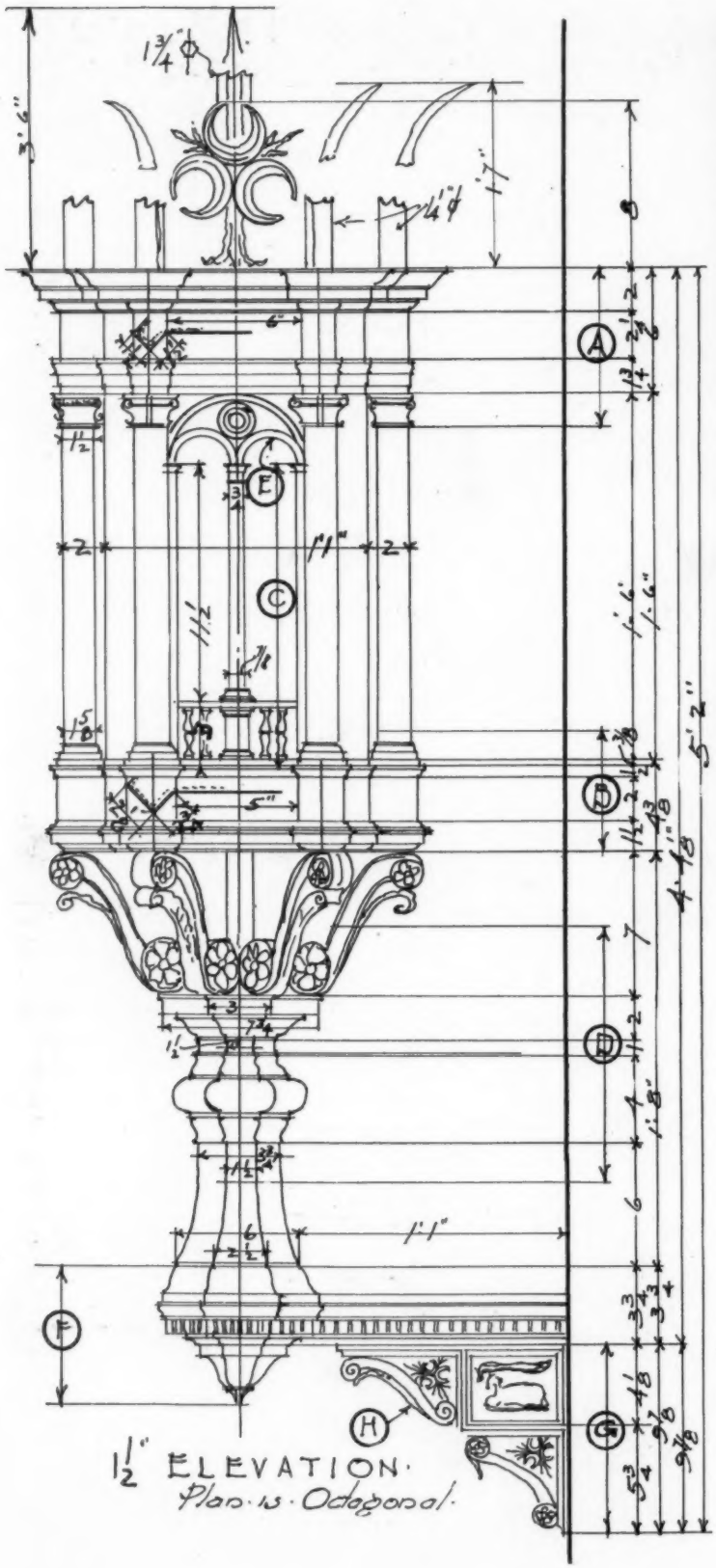
BALUSTRADE, BOBOLI GARDENS
SIENA, ITALY

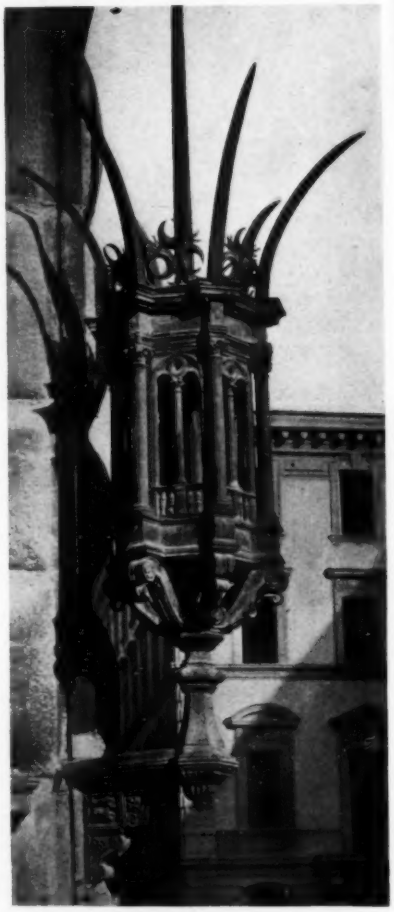
THE AMERICAN ARCHITECT, SERIES II.
FRENCH AND ITALIAN DETAILS



BALUSTRADE IN BOBOLI GARDENS, SIENA, ITALY

MEASURED AND DRAWN BY ROBERT M. BLACKALL

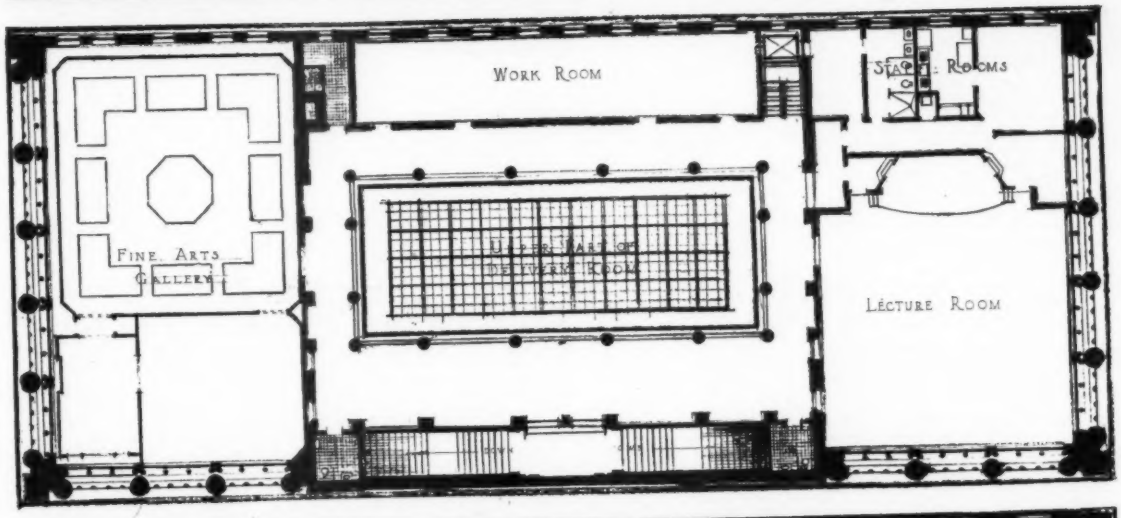


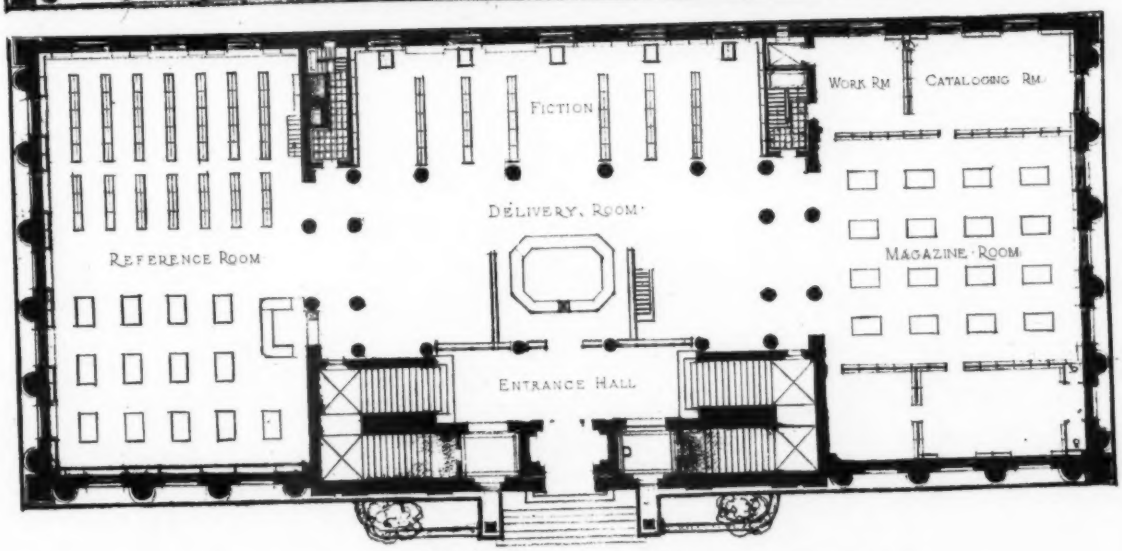


IRON LANTERN, STROZZI PALACE,
FLORENCE, ITALY

MEASURED AND DRAWN BY
ROBERT M. BLACKALL

THE AMERICAN ARCHITECT, SERIES II.
FRENCH AND ITALIAN DETAILS





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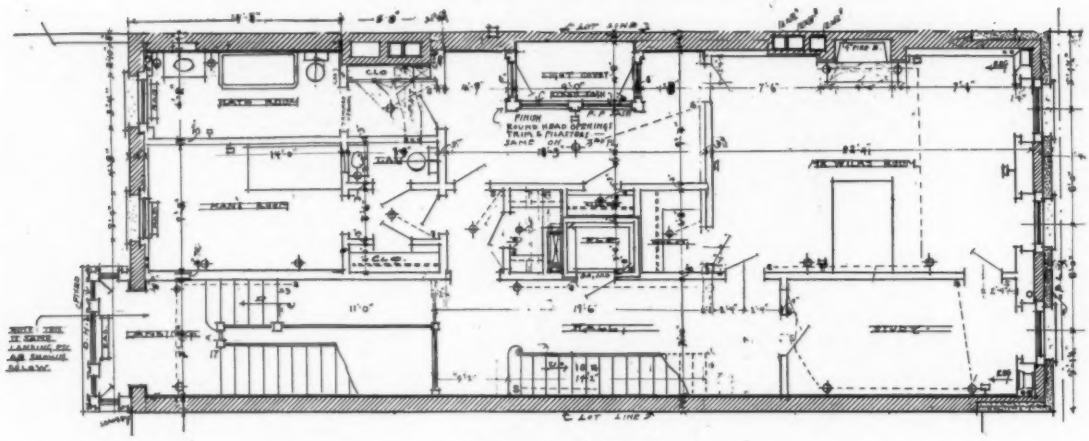
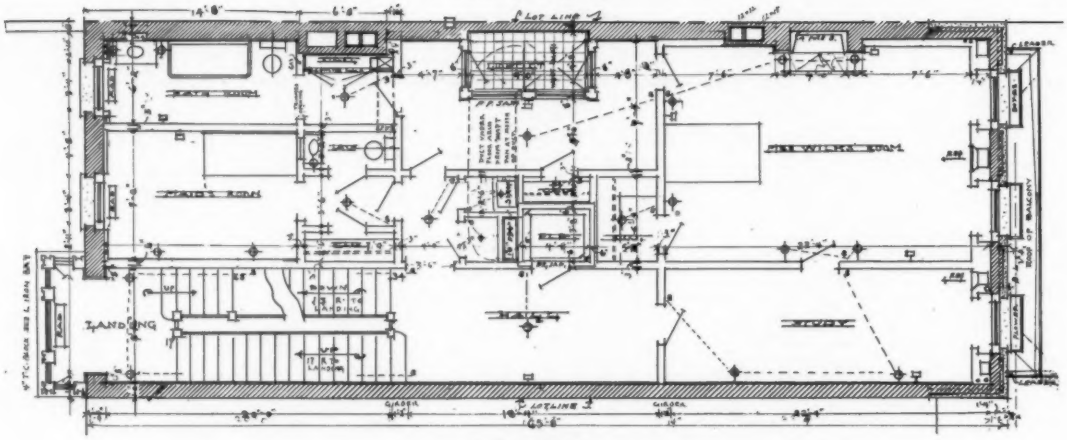
EDWARD L. TILTON AND ALFRED M. GITHENS, ASSOCIATED ARCHITECTS

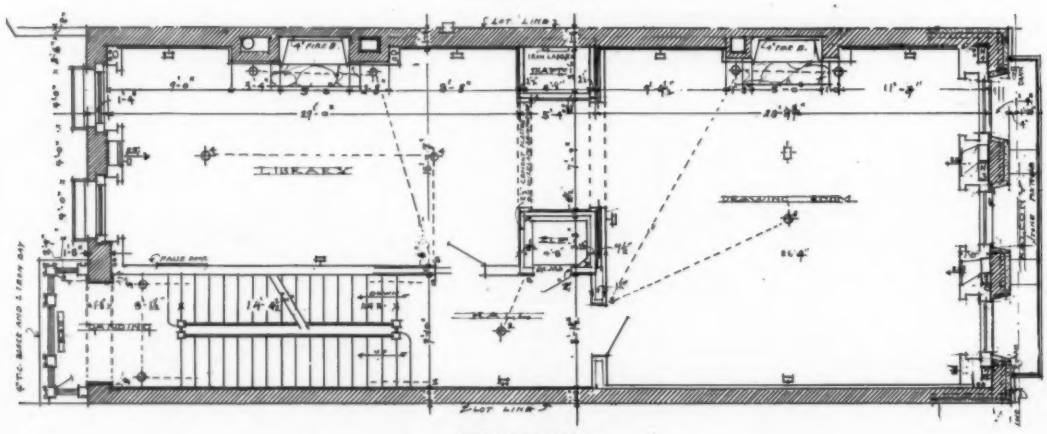
XUM



FOURTH FLOOR



THIRD FLOOR



SECOND FLOOR

HOUSE OF MATTHEW A. WILKS, ESQ., NO. 7 WEST 81ST STREET, NEW YORK

A. L. HARMON, ARCHITECT

(For exterior view and first floor plan, see plate section)

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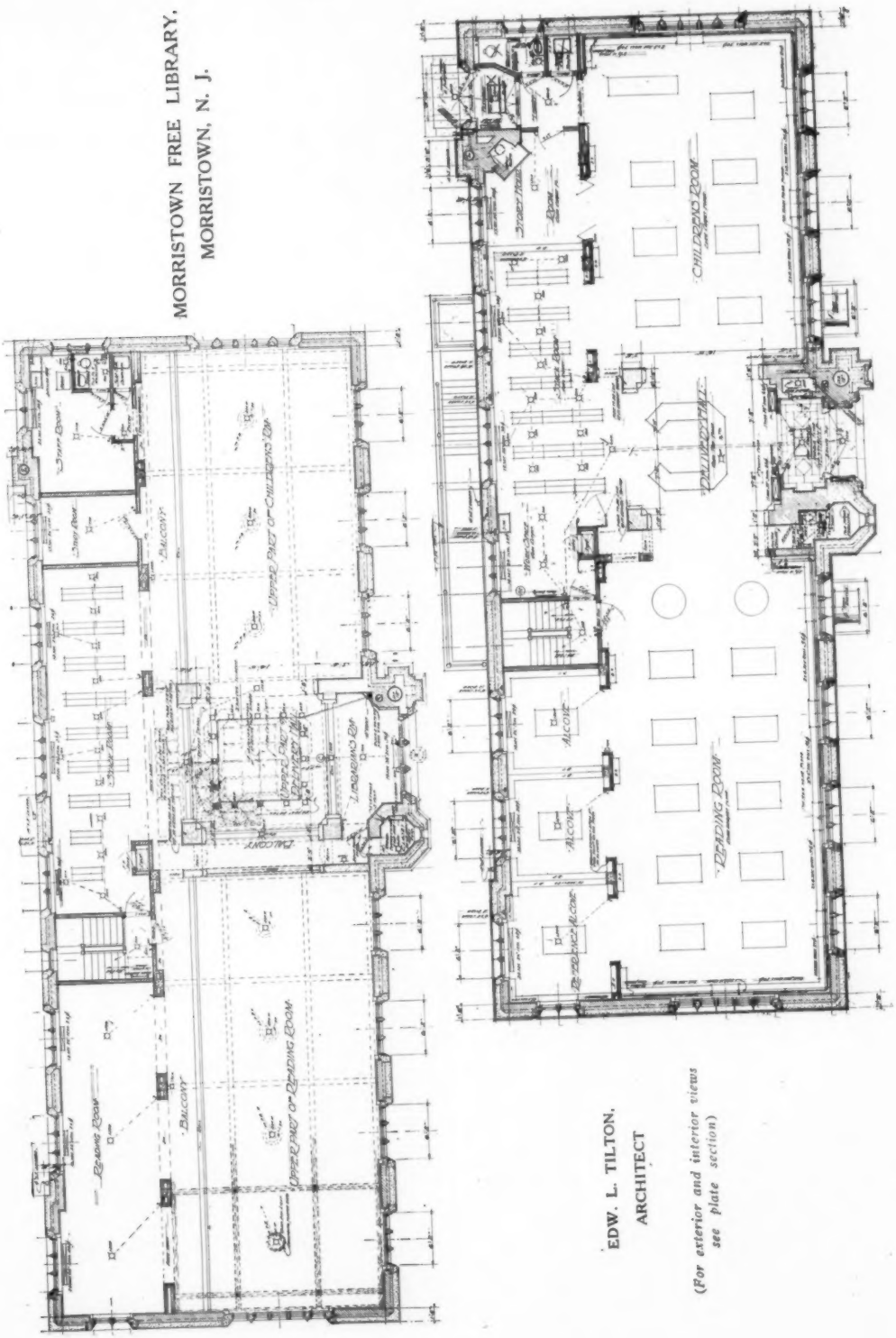
MORRISTOWN, N. J.



EDW. L. TILTON,
ARCHITECT

(For exterior and interior views see plate section)

BEAUX-ARTS INSTITUTE OF DESIGN

DIRECTOR OF THE INSTITUTE, LLOYD WARREN

ARCHITECTURE, RAYMOND M. HOOD SCULPTURE, JOHN GREGORY
INTERIOR DECORATION, ERNEST F. TYLER MURAL PAINTING, ERNEST C. PEIXOTTO

OFFICIAL NOTIFICATION OF AWARDS—
JUDGMENT OF OCT. 4TH, 1921

PROGRAM

CLASS "B"—VI ANALYTIQUE

The Committee on Architecture proposes as subject of this Competition:

"A STONE FIREPLACE"

The chief motif of decoration of the lounging room in a city club is a fireplace which is placed in the center of one of the end walls. The room itself is built of stone and it is desired that in the composition of the fireplace motif, columns and the simple forms of classic architecture shall play an important part. The fireplace itself is to be built of stone, although marble may be used in conjunction with it for contrasts of color and texture.

Fireplaces and decorative motifs of this character were common, particularly in the style of Henry II in France, as may be seen in the ball room of the Palace at Fontainbleau and in many tombs, as in the Cathedral of Saint Denis, where the classic forms were combined in a similar way. Freedom was obtained by the use and application of ornament. It is not intended in this case, however, that the student shall confine himself to the period of Henry II, but that he shall draw his inspiration from any one of the classic styles he desires.

Jury of Award:—R. M. Hood, L. Warren, H. R. Sedgwick, W. F. Lamb, H. O. Milliken, J. M. Howells, J. O. Post, J. C. Levi, A. D. Seymour, Jr., O. Faelton, H. W. Corbett and T. S. Holden.

This Jury also served as Jury of Awards for: Class "B"—VI Projet, Class "A"—VI Projet, Class "A" and "B" Archaeology—VI Projet and Archaeology—VI Measured Drawings.

Number of Drawings Submitted:—12.

AWARDS:—

FIRST MENTION:—Dell Jansen and A. E. Shrimpton, John Huntington Poly. Inst., Cleveland.

MENTION:—C. M. Woodward, George Washington Univ.; Y. Machacek and L. H. Schofield, John Huntington Poly. Inst., Cleveland; W. Hibbs, Atelier Norfolk; E. Norling and E. J. Leveque, Atelier Parsons-Chicago Archtl. Club.

PROGRAM

CLASS "B"—VI PROJET

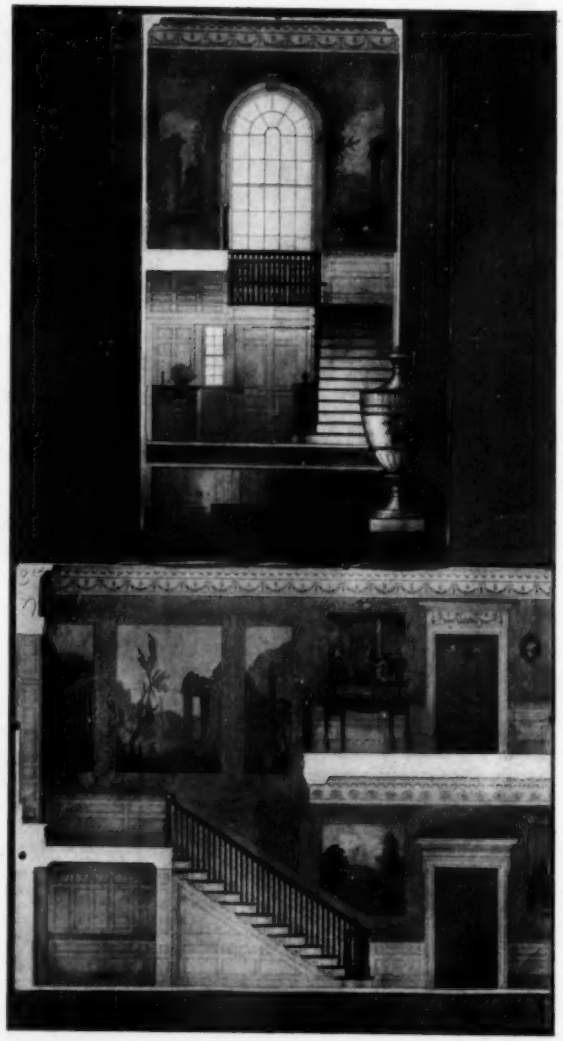
The Committee on Architecture proposes as subject of this Competition:

"A SCULPTOR'S STUDIO"

A sculptor who owns a large farm in the country intends to build himself a studio where he can work undisturbed and under ideal conditions. He has selected as the site a little knoll, which looks down through the trees to a rushing stream below, and here, without in any way sacrificing the practical requirements of a studio it is possible to develop the picturesque and attractive building that he desires.

The studio will consist principally of the single large room in which he works. This should have ample height and space for the execution of important work, and one of the chief requirements in this particular is that a raised platform or balcony shall be arranged on which he can model his work at a height from the floor that approximates its ultimate setting. Taking advantage even of the slope of the ground the sculptor would like to have an arrangement made, by which he will be able to move big pieces of work out of doors occasionally, where they can be studied and viewed in the sunlight. There is to be no heating plant in the studio. (for he does not intend to use it during the winter months) so he wishes to have an immense fireplace which, ornamented with some of his own sculpture will form an attractive architectural motif for the large studio, and heat the interior on chilly days. The lighting as in every studio should be ample, coming principally from the north, although other windows should be arranged not only to take advantage of the views out-of-doors but to make it possible to get a variety of lighting on his work.

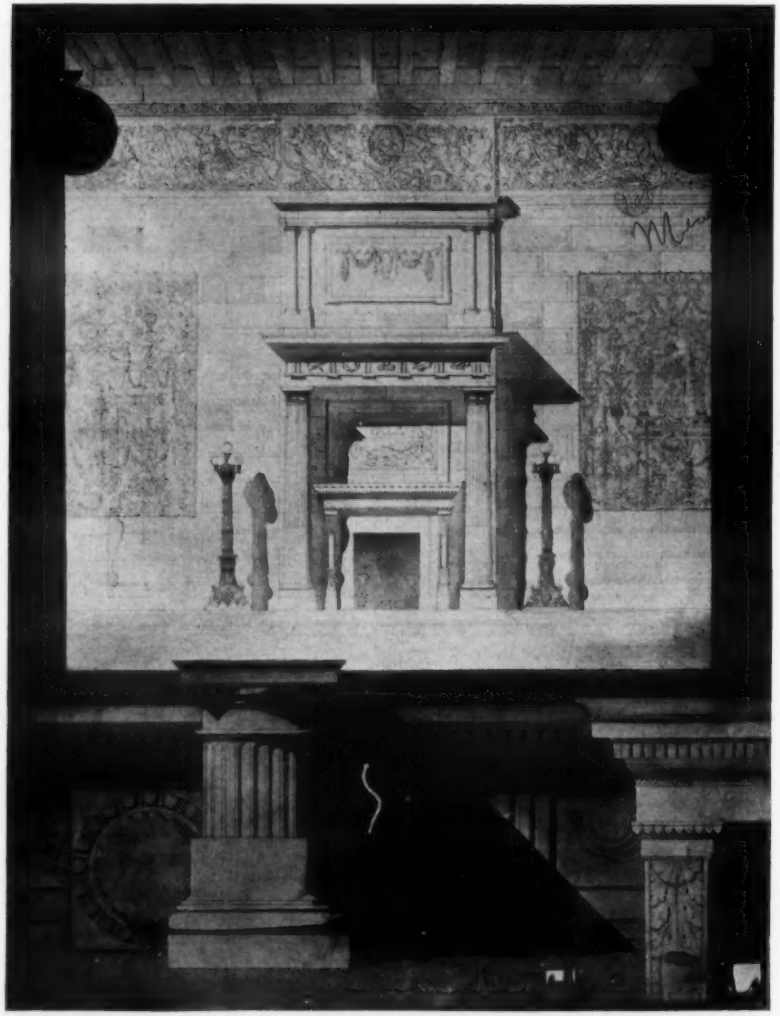
In addition to the studio itself there should be a small kitchen where meals can be prepared and another small room which can serve as a dining room, a reception room, or even a bedroom at need, as from time to time the



R. B. Thomas — Yale University

3d Medal

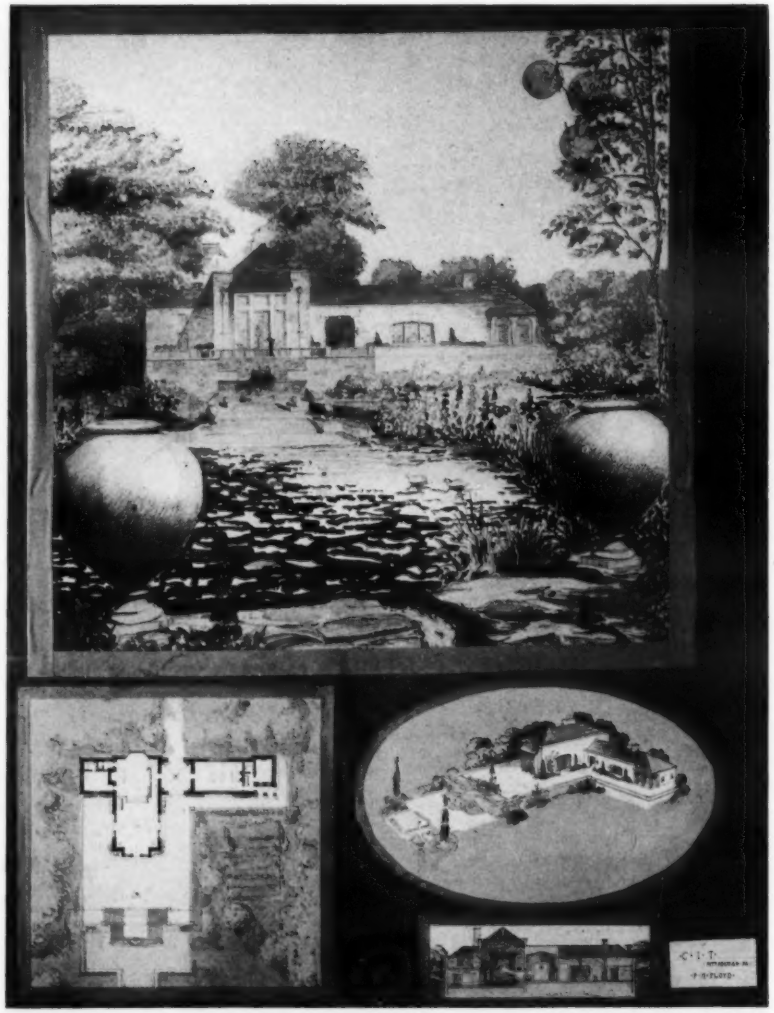
Class "A" and "B" Archaeology—VI. Projet—A Colonial Staircase



Dell Jansen — John Huntington Polytechnic Institute

1st MENTION

Class "B"—VI. Analytique—A Stone Fireplace



F. H. Floyd — Carnegie Institute of Technology

1st MENTION PLACED

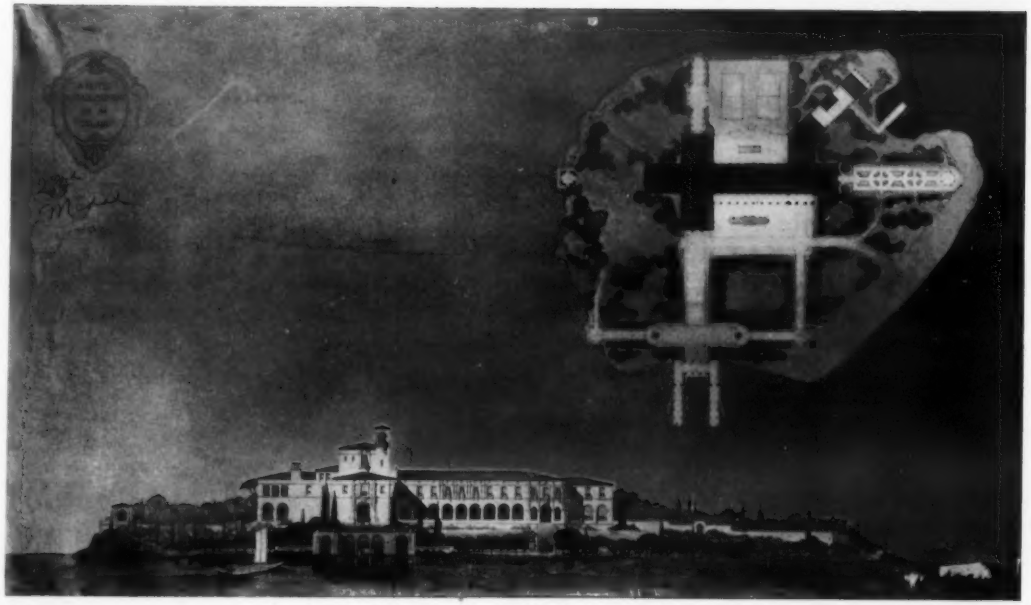
Class "B"—VI. Projet—A Sculptor's Studio

STUDENT WORK—BEAUX-ARTS INSTITUTE OF DESIGN

T. F. Price — Atelier Wynkoop

3d MEDAL

Class "A" and "B"—Archaeology—Measured Drawing



M. Rombotis — Los Angeles Architectural Club

2d MEDAL

Class "A"—VI. Projet—An Hotel Establishment

STUDENT WORK

BEAUX-ARTS INSTITUTE OF DESIGN

sculptor will wish to spend a few days continuously in the studio. Opening off the studio should be a work shop which need not exceed 750 sq. ft. in area. Here will be done the preparatory work, such as building armatures, mixing clay, and the plaster casting and the miscellaneous carpentry work which is necessary in a sculptor's studio.

The usual toilet arrangements shall be provided for the sculptor and the four or five assistants that he ordinarily employs. A store-room of approximately 750 sq. ft. area shall be provided which, if desired, can be placed in a natural basement formed by the sloping hillside.

The entire building shall not exceed 125'-0" in any dimension, and as a safeguard against fire, the sculptor wishes to build the walls of masonry, using either brick or a local stone of the vicinity.

Number of Drawings Submitted:—14.

AWARDS:—

FIRST MENTION PLACED:—F. H. Floyd, Carnegie Inst. of Tech.

FIRST MENTION:—W. M. Burke, Carnegie Inst. of Tech.; V. B. McClurg, Los Angeles Archtl. Club.

MENTION:—I. Tron, J. M. Paul and P. Simonsen, Columbia Univ.; F. B. Smith, Carnegie Inst. of Tech; F. Sakata, John Huntington Poly. Inst., Cleveland; R. E. Dando, Atelier Parsons-Chicago Archtl. Club; A. F. Harrer, Atelier Wynkoop, N. Y. C.

PROGRAM

CLASS "A"—VI PROJET

The Committee on Architecture proposes as subject of this Competition:

"AN HOTEL ESTABLISHMENT"

An hotel establishment is to be built on a small island of irregular outline lying a short distance from the mainland. The island in plan is roughly comprised within a rectangle that measures 900'-0" by 600'-0". The architect who is to construct this hotel has been given the greatest freedom in the disposition in the units of the group, and the landscape treatment.

The following are the requirements that are given to him:

THE HOTEL:—This shall provide for 100 bedrooms with the usual requirements on a main floor such as the office, a large restaurant, a small grille, reception rooms, writing rooms, and a ball room. Porches or shaded terraces shall form a part of the composition.

SERVICES:—The services shall be arranged in a semi-detached building or buildings, and shall include the kitchens, scullery, laundry, servants' dining rooms, and sleeping quarters.

THE GROUNDS:—These shall be arranged to include a bathing beach, tennis courts, croquet lawns, and formal gardens. A small harbor, landing place and boat houses shall be arranged for boats and launches, which are the only means of connection with the mainland. The service courts shall be carefully screened so that they are not objectionable to the hotel guests.

Number of Drawings Submitted:—5.

AWARDS:—

SECOND MEDAL:—L. Rombotis, Los Angeles Archtl. Club, Los Angeles.

MENTION:—I. J. Loebl, Chicago Sch. of Archt.; J. Pendlebury, 2509 Ave. "D", B'klyn, N. Y.; A. H. Goddard, Atelier Wynkoop, N. Y. C.

PROGRAM

CLASS "A" AND "B" ARCHAEOLOGY—VI PROJET

The Committee on Architecture proposes as subject of this Competition:

A COLONIAL STAIRCASE.

The staircase was one of the elements of the colonial house, on which the carpenter architects of the period devoted their greatest efforts and skill. Occurring in the central hall of the house, it usually started on the side wall, returning on itself with right angled turns. In the large mansions, where the ceiling height was great, the development of the landing at the turn made it the motif of chief interest in the staircase hallway. Invariably the one large window of the house, usually of Palladian design, was placed here flooding the staircase and hall with light, and the landing was usually made of sufficient size to accommodate the musicians at the times of entertaining. In the south even, this feature was often arranged as a separate balcony opening off the landing.

The stairs were built as a rule with open strings, and a great deal of ingenuity was displayed in the elaboration of the exposed ends of the steps. Newel posts occurred at the turnings, the one at the start of the stairs being frequently developed into an attractive form by turning the stair rail in a spiral about it. The exposed soffits of the stairs were either plain plastered or wood panelled surfaces. The side walls were variously treated with panelled wainscoting and the attractive wall papers of the period.

The staircase that is the subject of this problem runs from the first to the second story of the large mansion. The hall in which it occurs is 14'-0" wide, and the height from the first floor level to the second floor level is 13'-0".

Number of Drawings Submitted:—7.

AWARDS:—

THIRD MEDAL:—L. H. Schofield, John Huntington Poly. Inst., Cleveland; F. M. Garey, Richmond Archtl. Club; R. B. Thomas, Yale Univ.

Number of Drawings Submitted:—5.

MENTION:—E. W. Niblet, Richmond Archtl. Club.

SUBJECT:—

Colonial Doorway at No. 15 Wash. Square, North, N. Y. C., about 1829.

AWARD:—

THIRD MEDAL:—T. F. Price, Atelier Wynkoop, N. Y. C.

SUBJECT:—

Pulpit—St. Peter's Church, Philadelphia.

AWARD:—

THIRD MEDAL:—A. E. Westover, Jr., "T" Square Club, Philadelphia.

SUBJECT:—

The Root House, Skaneateles, N. Y.

AWARD:—

Mention:—E. R. DeShaw, Syracuse Univ.

SUBJECT:—

The Gate Lodge of the Longstreet Castle, Syracuse, N. Y.

AWARD:—

MENTION:—C. H. Siebert, Syracuse Univ.

XUM

DEPARTMENT OF SPECIFICATIONS

IN previous issues this department has discussed specifications for foundation work and has presented suggestions respecting the compilation of outlines for foundation specifications.

We will now take up the consideration of specifications for structural plain and reinforced concrete work, and other miscellaneous concrete items encountered in and about building construction, even though they are not strictly a part of the structural work. This will presuppose the erection of a building of a number of stories in which there are present reinforced concrete columns, beams, girders, trusses, floor and roof slabs, walls, machinery foundations, the numerous items of plain concrete together with material for and the erection of forms, reinforcing media, the mixing and placing of concrete, and other correlated items.

In order that the reader of the specification may know what to expect in the way of building construction work when he starts to analyze the drawings (this is especially true in the case of the estimator), one must assume that the specification will be a specific description of certain factors and elements that cannot be placed on the drawings or that properly should not be presented in the form of notes elsewhere than in the specifications.

For this reason specifications for structural concrete work should commence with a brief description of the various component parts and the list of structural drawings and accompanying architectural drawings that must be consulted. Further with respect to this list of drawings, it is possible that it will be necessary, or at least advisable, to include the mechanical and electrical equipment drawings so that inserts or anchorages may be anticipated or provided for in some manner, and so that if these items are not furnished to the contractor, he will know that they are required and will endeavor to hold up the pouring of concrete in one location or another until he has been assured that all items that are to be embedded in his work have been positioned correctly.

If there is any structural steel to be furnished and placed by the concrete contractor or is to be furnished and installed by others, or furnished by others and installed by the concrete contractor,—similarly if there are miscellaneous concrete items such as small engine and pump foundations that are to be furnished by other contractors,—these items must be explained fully so that the contractor will understand exactly what is to be included and also have a clear understanding of what is to be excluded. The specification writer must remember that if things are not excluded they are presumed to be included, especially where the phrase "all other concrete work" is used. That is to say, the attitude of the specification writer may be this but if there is a somewhat detailed description of the things to be included in the scope of the contractor's work, but in the body of the specifications no further specific mention is made of one or two items, the contractor may not understand fully and make inquiries which are useless.

In the proper order of sequence specifications for concrete structural work should be divided somewhat as follows:

Testing of Materials
Forms
Reinforcing
Mixing of Concrete
Placing of Concrete
Removal of Forms
Protection of Green Concrete
Finish of Concrete

with paragraphs interposed relating to the various miscellaneous items that are to be considered.

In the first place one cannot be too particular in knowing the quality of cement aggregates and water that are to be used for concrete work. In many cases the specification writer assumes that materials will be furnished of fairly good quality but he must not forget that it is possible the concrete engineer has based his calculations on a mix of concrete that will produce certain strengths. It would, of course, be ridiculous to have the design carefully studied and then to have the extremely fine work of calculation discarded through ineffective specifications. It is not deemed necessary at the present time to enter any further into reasons for tests of cement and aggregates; these reasons are too well known. It is well, however, to remind the persons writing specifications for a small structure, such as a residence or small store building, that even though the operation seems to be small and does not merit a great deal of attention a knowledge of the good and bad qualities of cement and aggregates should be in the possession of the specification writer.

Let us agree, then, that there must be certain standards of excellence laid down for the cement and other aggregates. It is customary for architects to specify that cement shall conform to the latest standard specifications for cement of the American Society for Testing Materials. Later, when the American Engineering Standards Committee is more fully established in the minds of all those having to do with building construction work, it is possible that their American Engineer-

ing Standards will be specified in a similar manner. Incidentally it would be of benefit to all readers of these columns to become acquainted with the activities of the American Engineering Standards Committee.

As to the qualities of the aggregates, it is rather hard to lay down rules, especially in view of the fact that many of the words indicating quality in common use today cannot be defined with any great amount of accuracy; for instance, with sand it may be all right to say that sand shall be "sharp" but this adjective really does not mean very much. Again, with respect to the coarse aggregates it is common to say that the material should be "hard, homogenous," etc., but while the meaning they convey to the average person is generally accepted as common requirements for coarse aggregates of good quality, when one attempts to analyze these words the looseness of any possible definition will be seen.

As a general rule, both with the fine aggregates and the coarse aggregates, it is desirable to obtain as much surface on one piece of sand or one piece of coarse aggregate that is possible. The specifications frequently reject round or rounded particles. Specifications further will reject long flat particles in coarse aggregate. Sizes of both aggregates should be specified, making sure that the minimum and maximum sizes are given where a spread is necessary. Aggregates generally should be graded from fine to coarse and it is customary so to express in the specifications these desirable qualities of large and small particles.

Aggregates must, of course, be clean and preferably should be washed. If it is local custom to indicate the size of aggregates by sieve numbers or by certain arbitrary numbers that trade usage has established, such defining terms should be used. A No. 4 aggregate in one locality might be a No. 3 aggregate in another locality and if the specification writer is not familiar with the local definitions it would be safer for him to specify by sizes in inches and fractions thereof for coarse aggregates and by sieve sizes for fine aggregates, making sure that sieve numbers are established standards such as those of the American Society for Testing Materials. If there is a question about the quality of sand, the specifications should require tests for the cleanness of the sand, these tests being made by very simple methods.

The water, of course, should be free from foreign substances or chemicals that might be dangerous to the cement or that might tend to discolor the finished work if discoloration is not desirable. A number of authorities on concrete mixing water have agreed that if water is potable it is generally good for concrete use.

The specification writer must exercise his own good judgment with respect to the length that he will go in specifying qualities of aggregates. For large reinforced concrete structures it is quite essential that qualities be very thoroughly established, especially if testing laboratory engineers are to be employed on the work. For smaller operations such rigid requirements will not be necessary.

Recently it has become customary to mix hydrated lime in the concrete and if this will be acceptable to the specification writer he should call for hydrated lime manufactured in accordance with the latest standard specifications for high magnesian lime of the American Society for Testing Materials. The concensus seems to indicate that high magnesian lime is to be preferred, although the specification writer should determine this question for himself, to some degree, by investigating the available kinds of lime.

If an integral dampproofing or waterproofing compound is to be mixed into the concrete it should be specified in the section devoted to qualities of materials. This section, of Qualities of Materials, should present requirements covering the kinds of forms, of reinforcing and of other miscellaneous items that the concrete contractor may be required to furnish. Although stated heretofore, it may be well to repeat here the belief that at the beginning of the specification there should be a section devoted to qualities of all materials so that the reader will know that all materials are specified in one part and that he will not be forced to search through all paragraphs to discover the quality of one of the materials.

It is just as necessary in structural concrete framing to employ the services of a surveyor in establishing lines and levels, as it is in foundation work. The specifications should include this detail so that there will be no question as to the responsibility for correct lines and levels, especially where they have been very carefully placed on the drawings with all figures made from certain bench marks.

The erection of forms is of great importance in all structural concrete work. Too much attention cannot be given to the fabrication and erection of the forms to the end that they may be stripped easily and without causing damage to green concrete. The specification writer does not have a great amount of latitude in the selection of the contours of forms since all profiles are established by the engineer. If what is known as "pan" construction is to be employed with beams about twenty-four inches on centers and a thin reinforced slab perhaps three inches thick over the beams, either wood or any of a number of patented metal forms may be used. For other floor slab construction either metal or wood forms may be used, although the use of metal in such cases has not been developed to a great extent. Forms for columns also may be either of metal or of wood according to the section of the column, its size, or whether it has a conical head or not, and other desiderati which have to do with the selection of the form best adapted to the work.

XUM

The forms must be adaptable to the work and should be of such kind that those things that must be built into the concrete when it is poured may be placed without difficulty. This means that if metal forms are to be used and built-in items are to hang from the concrete such as suspension wires for hung ceilings, the forms must admit the introduction of these wires without interference with their proper stripping. Strictures with respect to the kinds of forms should not be too great, especially where the concrete design has been carefully studied, as the contractor will be required to provide forms of the proper kinds and he should be allowed some latitude in the selection of materials. However, the forms in all cases should be erected substantially and so that after their position once has been fixed, they will not be disturbed during the placing of concrete or until the time of their removal.

Shores under beams and girders must be placed so that the forms for the sides of these members may be removed with the slab forms, leaving the soffits of beams and girders supported until it is safe to permit their removal. Forms should not be removed for at least seven days after the pouring of concrete. At this time slab forms may be removed, together with the sides of beams and girders. The supports under beams and girders should be kept in place some days longer; the exact minimum time should be determined in the specification with the further requirement that before any forms are removed the person in charge of the construction work must give his consent for such removal.

Although a number of years ago it was quite common to have concrete fail because of the early removal of forms, it is not believed that contractors are quite as careless now, nevertheless, each operation should be considered to be full of danger unless certain requirements that are standard all over the country, are complied with. The temperature at the time the concrete is poured and during the time it is being supported by forms also must be taken into consideration. The permissible minimum time for the removal of forms must be lengthened considerably according to the weather. The established minima, however, never should be changed as it is presumed that they have been established only because of certain well known facts peculiar to the work.

The column forms should be kept in place for at least two weeks. In all cases where there may be pressure on green concrete such as sidewalk beams that are formed into a retaining wall at the curb, and exterior columns in the building, or where the basement walls are retaining walls as well as foundation walls, it is always advisable to require that forms be left in place until concrete has dried out thoroughly so as to obviate any difficulty arising from external forces acting on the structural form work.

It is well to mention here one precautionary measure that should be mentioned in all operations no matter what the size of the building may be. It is this. The form work must be designed with a certain amount of engineering skill, not only for reasons of economy but for reasons of strength and of substantiality. In connection with this precaution the shores should be placed on firm ground and should be well footed in place. It may seem unnecessary to say that shores never should be placed on frozen ground unless it is known that the ground will remain frozen during the time the shores are in place. Strict accuracy requires that it be said such assurance is almost impossible to obtain from anyone, and therefore it is advisable to require that where shores are placed on soil during freezing weather, they should extend down to a depth sufficiently beyond a possible frost line to preclude damage from settlement during thawing periods.

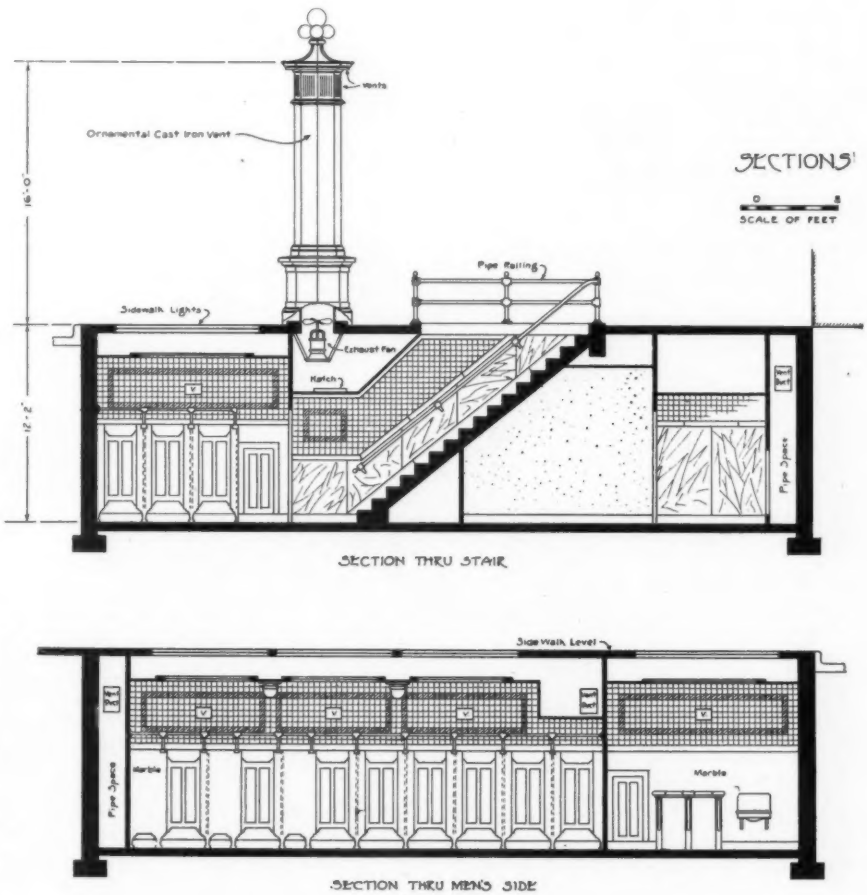
(*To be continued*).

DEPARTMENT OF ARCHITECTURAL ENGINEERING

DALLAS PUBLIC COMFORT STATION

A comfort station in which provisions are made for two races

PUBLIC comfort stations in Northern cities where the race question is not raised, are simple by comparison with similar utilities in Southern cities. Public Comfort Station, No. 2, Dallas, Texas, has four separate divisions, one for white men, one for white women, one for negro men and one for negro women. It was considered desirable to have separate stairways for the two races but space did not permit. In each of the white divisions there are several pay toilets, each provided with a lavatory. There are two attendants constantly on duty until midnight, one in the men's, and one in the women's divisions.



Public Comfort Station, No. 2, Dallas, Texas
J. Ed. Overbeck, Architect

Each division has a drinking fountain, the water being cooled in continuous coils around the interior of the ice chamber of an ice box into which ice is put from the top. The place was piped for gas for heating purposes, but so far no heat has been required to keep it comfortable.

An exhaust fan is used for ventilation. Vent ducts extend from a chamber below the exhaust fan, with connection to each division at several points and to each individual toilet and urinal stall. The fresh air is taken in through the entrance doors, which are seldom, if ever, closed.

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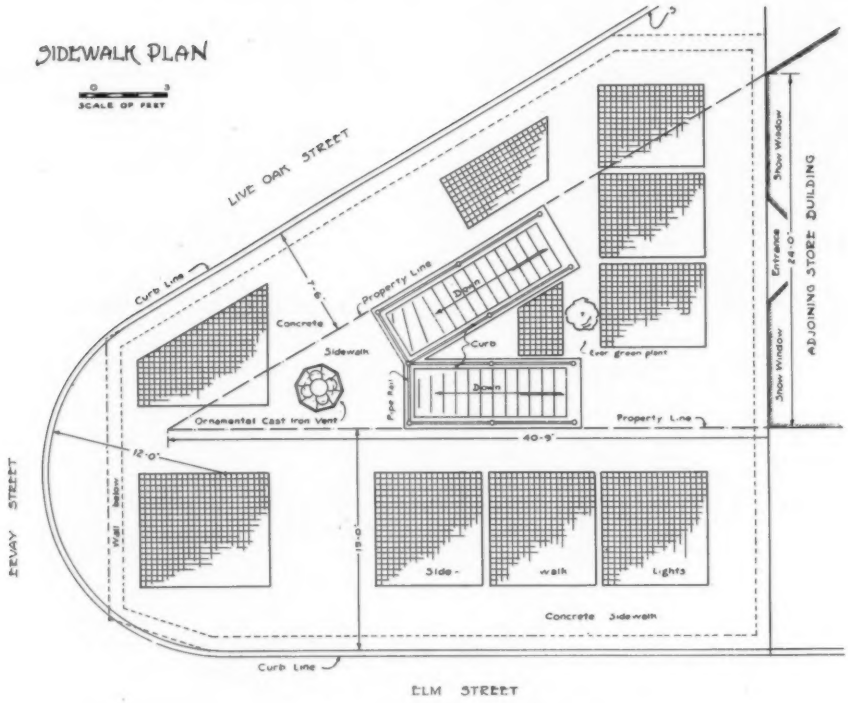
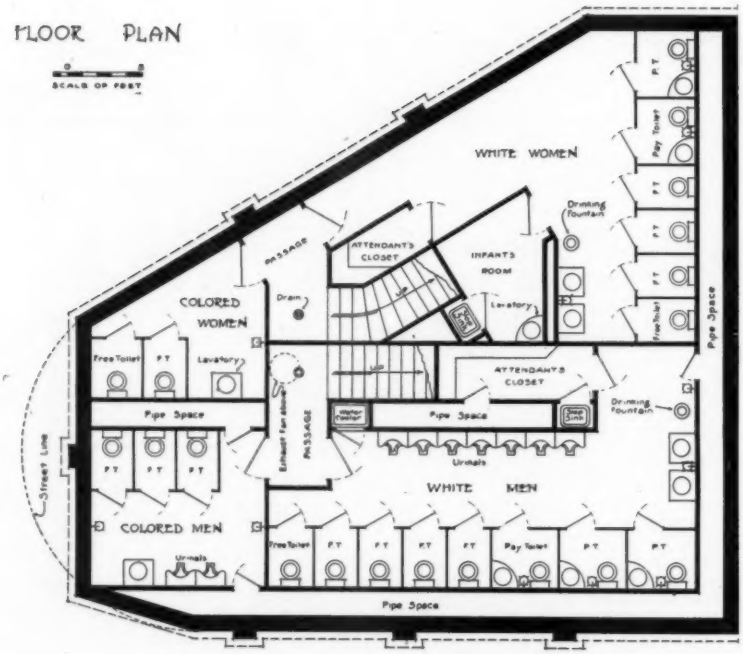




PUBLIC COMFORT STATION, No. 2, DALLAS, TEXAS

Provision made for two races with common entrance. No superstructure

1. Ed. Overbeck, Architect

The foul air is discharged through a metal shaft extending 16-ft. above the sidewalk. The vents from the plumbing fixtures also enter this main discharge shaft. The shaft is enclosed in an ornamental cast iron casing with openings at the top to let the air out. The open top being so high above the sidewalk and quite a distance from any building, no objectionable odor has ever been noticed.

The place is lighted at night by electric lights placed in fixtures directly against the ceiling between prism glass sash. Practically no reflection goes up through the sidewalk glass. The only plumbing pipes placed below ground are the soil or waste pipes which are all extra heavy cast iron. All other pipes are placed in overhead spaces provided for them and are at all times accessible for inspection or repairs.

A suspension ceiling is used to conceal beams and all overhead work. The greater part of the ceiling consists of prism glass in removable sash which can be taken out for cleaning the glass. The remainder of the ceiling is plastered. The sidewalk, forming the roof, is of reinforced concrete, the grade surface studded with prism sidewalk lights for lighting the station.

Marble treads were used for the stairs but they wore rapidly, especially on the men's side, so were replaced with treads of a more serviceable type. The floor is laid with 9 x 9-in impervious red tile with 1/2-in. gray tint tile strips between all pieces. The border is a nine inch gray flint tile and the base is of gray flint tile six inches high. Italian marble is used for all wainscoting, divisions between and fronts of toilets to a height of six feet. The walls above the marble are of white semi-glazed tile in 4-in. squares, with tile molding in the ceiling angle. Mahogany is used for doors and all wood finish.

Lack of space and the restrictions placed upon the construction of the station brought the two stairways close together at the grade level. A large evergreen plant was placed between the stairways and no complaints have been made.

The architect had a nice little problem in the design and construction of this station. The irregular corner was acquired through the widening of Elm Street and the cutting of from twelve to fifteen feet off the fronts of buildings. There was so little left of the corner lot that it was decided to put a comfort station on the piece salvaged. In the agreement between the city and the owner of the adjoining property it was stipulated that nothing was to be built above the sidewalk level that would, in any way, obstruct the view of the neighboring store. This prevented even the erection of a hood over the stairway, so that all rain falling on the stairs is taken away by a floor drain at the bottom. The only thing above ground is the vent shaft.

The station was built jointly by the city and the city Park Board, each paying half the cost.

JURISDICTIONAL DISPUTES

THE Associated General Contractors of America reports that, together with The American Institute of Architects, The Engineering Council, The National Building Trades Employers Association, and the Building Trades Department of the American Federation of Labor through the National Board for Jurisdictional Awards they have reached a national agreement through a resolution heavily penalizing union workmen who refuse to abide by the decisions of the Board.

The resolution provides that local building trade councils of union labor shall suspend unions and refuse to recognize or support those unions which refuse to abide by decisions of the National Board. It also provides that general contractors and sub-contractors who employ only union labor shall incorporate in their agreements with labor a provision that will secure compliance with all the decisions of the Board. Employment will be refused to members of local unions which do not abide by such decisions and architects and engineers are requested to insert in all their specifications and contracts a clause that such decisions shall be followed.

Of the seventeen international unions that constitute the Building Trades Department of the A. F. of L., sixteen have unqualifiedly endorsed the work of the Board and supported its decisions. The United Brotherhood of Carpenters and Joiners alone, although one of the original organizers of the Board, now refuse to support it. As a result they have been suspended from the Building Trades Department of the American Federation of Labor, and through this resolution are outlawed by every building trade council, and the leading organizations of general contractors, sub-contractors, engineers and architects in the country.

The Members of Jurisdictional Board are: E. J. Russell of St. Louis, Chairman, American Institute of Architects, R. P. Miller of New York Engineering Council of Federated American Engineering Societies, Col. John R. Wiggins of Philadelphia and F. J. C. Dresser of Cleveland both of the Associated General Contractors of America, C. C. Pierson, of Indianapolis Building Trades Employers Association, John J. Hynes, John Coefield, Thomas R. Preece, of the Building Trades Department of the American Federation of Labor, and Wm. J. Spencer, Executive Secretary, American Federation Building, Washington, D. C.

XUM

ELECTRICITY IN THE HOUSE

II — THE LIVING ROOM

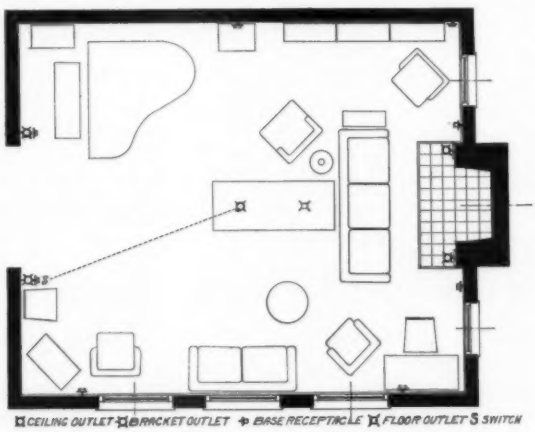
BY M. O. WHITTEN

FOR many people, the best way of learning to swim is to jump in; similarly, the best way to study the wiring of a modern home is to go right ahead and wire it,—on paper.

And the best point at which to make the plunge seems to be the living room, possibly because the very words, "living room" suggest that space not merely as four walls and ceiling, but as a much inhabited place, the center of family activities. The writer believes that the secret of a successful house wiring plan lies in the ability to visualize the usage of the house. If one can know thoroughly what people are going to do in a room, it becomes much easier to plan its electrical facilities.

Also, in selecting the living room as point of entrance into the subject, one is brought face to face with another problem,—that of the scale of living. Now, while among the very wealthy, we still have separate drawing rooms, reception rooms, a library, or music room, and the informal sitting room, the tendency with the ordinary dwelling of the better type has been to combine all or nearly all of these functions in one large living room. This is true of houses well on towards the mansion, although in many instances, the living room is supplemented by an enclosed porch, or entrance hall enlarged into a reception room, or an upper hall is so treated as to provide a small sitting room. Therefore, in selecting a typical house plan for the purpose of the present series of articles, the writer will follow this tendency, and assume a living room which is, as occasion demands, parlor, music room, library and family sitting room. The electric wiring provided for this room has been developed with these various usages in mind, the object being to secure a system sufficiently flexible to answer all the requirements placed upon it.

The plan chosen shows a living room, 14 by 18 feet, with three windows along its southern wall, while at the eastern end is a large fireplace, flanked by two smaller windows. At the western end is the wide entrance from the entrance hall, the one long, unbroken wall being at the north. With this as framework, the following arrangement of furnishing is suggested, not as anything especially original or striking, but merely as that frequently followed by interior decorators in handling rooms of this general style. No particular brief is held for this room plan, the idea being simply to select some logical, reasonable arrangement of furnishing, sufficiently detailed as to bring out electrical requirements.



A living room wired for maximum comfort and convenience. Typical layout to meet demands of modern life

On this assumption, then, in the northwest corner, using some seven or eight feet of the unbroken wall space, is placed the piano, with its bench and music case. Beyond this, the wall is given up to book cases, three or more, depending on the taste and inclinations of the family. Carrying out the library idea in this section of the room is a small table, while in the northeast corner, flanked by a case and a window, a large easy chair placed between the magazine stand and the center table tends to fill out the grouping at that end of the room.

The next division of the room is grouped around the fireplace, before which is located a large, comfortable couch, near one end of which is the magazine stand. In the southeast corner is the desk, well lighted by day from the east window nearby. The position chosen for the center table was selected partly to block off, as it were, the book corner, and at the same time to leave practically all the general southwest part of the room as an unbroken space, desired both for aesthetic reasons, and for availability in entertaining. This is furthered by the small sofa or settee in the middle of the south wall flanked by a small round table. The settee leads down to the southwest corner where an easy chair and the tea-wagon are placed. These locations provide

a listening group for the piano, while the position of the tea-wagon at the entrance of the room, suggests its ready shifting for use on the porch or elsewhere in the house.

THIS room arrangement being accepted in principle, as the diplomats say, the next step is to develop the electric wiring plan necessary and desirable. To begin with, the writer recommends a central lighting fixture, supplemented by bracket and portable lamps. Were this room library, music or sitting room only, the central fixture could be dispensed with, but it is rather difficult to imagine any very cheerful social function enacting itself by the dim and soothing light of a few well shaded wall brackets.

Proceeding, then, with the wiring. To the right, as one enters the room, are placed the switches that control the center light and the wall brackets. Lighting or portable lamps, however, can well be left for local action. For general illumination, wall brackets are provided in symmetrical positions, at either side of the hall entrance, and to right and left of the fireplace. A double base-board outlet is also recommended at each of these locations; that to the right of the entrance, will take care of electric equipment for the tea-wagon, and the one at the left, will permit use of a floor lamp for the piano, if desired. The receptacles to the left of the fireplace supply the desk lamp nearby, while the outlets to the right are recommended on general principles; they will permit use of the tea-wagon at that point, provide an outlet for the vacuum cleaner, allow for the location of a fan in hot weather, or supply a lamp or electric candles on the mantel. In other words, this arrangement will secure that flexibility of usage which is the goal of a good wiring system.

IT will be noted that no brackets are allotted to the north of the room, but any lighting required is derived from base-board receptacles, one located just beyond the piano, and one at the further end of the room. On a long, unbroken wall space it is difficult, both for aesthetic and practical reasons, to give brackets a satisfactory placement; if the brackets are located in accord with a furniture plan, a later change of that plan would leave the brackets without any *raison d'etre*. On the whole, the base-board receptacle provision is safer, and more flexible. For this particular room arrangement, one suggests a table lamp as indicated on the plan, and some other suitable lamp at the further end of the book cases, supplied in its turn by the further receptacle.

The long south wall, broken by windows, is also better left without brackets, while the base-board receptacle near the desk gives the local illumination needed there. This receptacle is balanced by another at the west end of that wall, provided more on the general theory of flexibility, than for any immediate need as indicated by this particular arrangement of furniture. Following this out, it should always be remembered that a double base-board outlet costs practically no more than a single one, and greatly improves the general freedom and variety of usage afforded. A floor outlet under the center table supplies the floor lamp placed at the back of the couch, and also makes easily possible any desired use of electrical appliances on the table.

IT must be understood that this is an inclusive wiring plan, a wiring plan designed to give the greatest comfort and satisfaction in living, rather than to save wiring cost. While the writer will later offer a few suggestions for reducing expense, it may well be asked why should the wiring always be selected as the point at which to economize? When once the house is completed, changes and alterations to the wiring represent a fair degree of expense, and a certain element of inconvenience. Would it not be really more logical to forego some of the many coats of paint usually specified, or content oneself with a trifle less expensive wall covering, or something less palatial in bath room fittings, and in return for such saving, provide the client with a thoroughly livable, modern home? Architects designing homes today all recognize the importance of the domestic employment problem, more especially that phase of it represented by the absence or scarcity of "help," and take this fact into consideration when drawing their plans. It is also a fact that liberal use of electricity and electric appliances has done much and can do still more to temper the east wind to the shorn lamb, and the wise man will build his house accordingly.

Having made this plea for an inclusive wiring plan, the author will now point out how such a scheme as that suggested, could be modified in the interests of economy, without great loss to the comfort of living. For instance, instead of having two receptacles along the north wall, one at about the central point could be made to do, and additional lighting for the book cases could be derived from the receptacle to the right of the fireplace. Likewise the receptacle at the west end of the south wall could be omitted, making the receptacle to the right of the entrance do double duty. Similarly, the floor outlet under the table could be dispensed with, the floor lamp being relocated, and supplied from the receptacle at the center of the north wall. Whether the loss of flexibility resulting from such a cutting-down is compensated for sufficiently by the money saved is a question which in every case must be left to the client to decide, after the architect has shown the better way.

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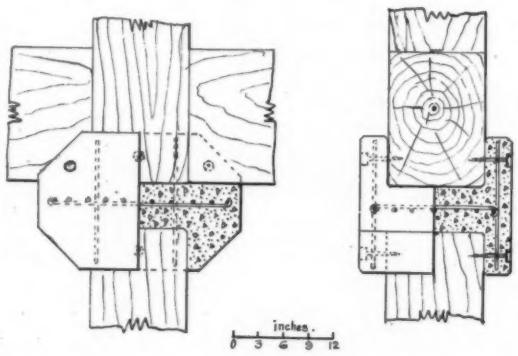
REINFORCED CONCRETE CAPS FOR WOODEN POSTS

MR. S. H. INGEBORG of the Bureau of Standards recently patented a reinforced concrete post cap and assigned his patent to the public. For this action he is deserving of much credit. Tests were carried out at the Underwriters' Laboratories, Chicago, to determine the value of these post caps as compared with post caps of metal. Not many years ago timber posts carried girders and beams by means of horizontal "pillow blocks" or corbels, which were strong beams but which reduced the carrying capacity of the posts by the difference between vertical and horizontal compressive strength in the timber used. Our forefathers sometimes used oak pillow blocks in order to effect a balance, when the posts, or columns were of pine or hemlock. The introduction of cast-iron was a decided improvement, for the full strength of the post was preserved. In case of severe fire cast-iron caps were dangerous if struck by water when heated. The use of pressed steel caps is now common for steel has greater strength and costs less per pound than cast-iron.

Failures in "slow-burning" mill construction are hastened by the giving way of metal post caps when heated. The reinforced concrete post cap was evolved to lessen this danger. Tests were made on 12 x 12 timber posts to determine how long they could carry a load in a high temperature fire. Tests were then made on posts with steel post caps after which tests were made with posts having reinforced concrete post caps. The posts with steel post caps failed sooner than posts without caps and the full strength was developed of the posts with reinforced concrete post caps. This amounted to doubling the fire resistance of timber mill construction by comparison with results given with steel caps. Thermo-couples embedded in the interior of each cap recorded the temperature at the middle of the end face of the post where it was in contact with the cap. The maximum temperatures reached were, 195 deg. F. for the concrete and 685 deg. F. for the steel caps.

The design of a reinforced concrete cap will depend upon the loads to be carried, therefore the reinforcement of the caps tested is merely indicated in the accompanying cuts. Vertical rods 1/4-in. in diameter were placed on each side, rods of the same size being used for reinforcement of the bed between the ends of the posts and extending into the corbels. In addition there were horizontal rods in each side attached to the vertical rods and wire mesh attached to the horizontal rods in the bed. No beams were carried in the tests, all the load being vertical and applied by means of a hydraulic jack.

It is too early to say that reinforced concrete post caps will replace those of cast-iron or steel. Direct shear will be high at the edges of corbels carrying beams and the allowable compressive stress in the best concrete is not equal to the compressive fiber stresses used with timber columns. Either the concrete must be used with a lower factor of safety than is considered wise, or the allowable fiber stresses in direct compression in timber must be reduced. Concrete post caps to be efficient must be made with great care in factories and this will require that they be used near where they are made, as cartage, handling and freight will make them costly when shipped any considerable distance. The material is also liable to be damaged when handled several times.



The Ingeborg reinforced concrete post cap for slow-burning mill construction

Concretes using sandstone and limestone aggregates have not given satisfaction when subjected to fire. Good coke and carefully selected cinders should be good but concrete with such aggregates is deficient in strength. Granite or trap rock alone are good enough for concrete intended to be used because of its value in fire. The quality of the sand is of no less importance than the quality of aggregate. That the mixture should be rich cannot be denied. The caps used in the tests mentioned gave good results no doubt because the materials were carefully selected and carefully molded. The same quality of work will be hard to obtain commercially.

Several architects and engineers have suggested the use of concrete to fireproof metal post caps. Waxed paper would be placed within the caps, extending several inches beyond the edges to pre-

vent the contact of wet concrete with the timber posts and beams. Sheets of metal lath to be bent into the space between the caps and the wood and covering the exposed faces. A rich plaster to be applied with trowels to cover the caps to a thickness of not less than one-and-one-half inches extending out over the wood, which is protected by the waxed paper. When the plaster is dry the projecting edges of the paper may be trimmed. This will give all the protection needed by the metal and will guard the greater strength afforded by metal caps as compared with concrete caps. The suggestion has also been made that at all ceiling levels the intersections of beams and posts might be covered with waxed paper over which would be nailed metal lath and over this can be shot Gunite to any desired thickness. The ideas may well be followed out until something really good is found as a substitute for the exposed metal post cap.

Swimming Tanks and Spectators

THE architect is charged with many sins and one now being discussed is his failure to consider the rights and comfort of spectators at swimming tank meets. The swimming tank originally was a clever device to make bathing a sport and permit enthusiasts to continue swimming indoors during the winter season. For the sake of economy the tank was put in a basement where artificial lighting and poor ventilation often nullified all the benefit given by strenuous exercise in the water.

With the growth of public interest in swimming as a sport rather than as healthful exercise, come suggestions that in the future provision must be made for spectators. The latest criticism is from the sporting writer Fred A. Haynor who said in a recent issue of *The Chicago Daily News*:

Architects may not know it but they are being criticised. It all came out when Charles A. Dean, veteran official of the A. A. U. was discussing conference crowds and conference swimming meets.

"A swimming tank is built in this way," said Mr. Dean. "An architect has to draw plans for a gymnasium. He visits one of the big clubs and studies our antiquated tanks, antiquated as far as accommodating the spectator. As a result it is stuck in some corner down in the basement with absolutely no chance for a crowd to see the games of polo or swimming races in which Chicago is intensely interested.

"A tank should have a roof open to sunlight and air. There is no reason for putting it down in the basement. The Detroit A. C. has one on its fourth floor and the Cleveland A. C. has one on its tenth floor.

"I inquired once as to the extra cost of putting the tank on the roof and was told that the extra foundation and upward beaming would increase the cost by several thousand dollars.

"In addition to having sunlight, a tank should have plenty of head room. The air would be much improved if this were the case with our tanks hereabout. Most of the tanks have low roofs with fancy marble work. You pack a crowd in there and the close air deadens the speed of the swimmers.

"I am in despair when I referee a meet at the local tanks. Take at Northwestern, where hundreds fail to see the swimming meet and half of those who get in can see only half the water. Even there I have seen 500 people turned away because they could not get seats. Yet the Northwestern gymnasium outside is one of the most beautiful structures in the country. But the growing interest in indoor college athletics has not been met by any of the builders. The architects should come for their information to men of experience—men who handled these big meets—and let them present the problems growing out of the development of athletics."

Paint as a Sound Absorber

TO reduce echo a common expedient is to apply a sound absorbing material to wall surfaces. Recent experiments with paint showed that painting makes a reflecting wall a good absorber.

In order to get at least an approximation of the sound absorbing properties of paint, a series of tests was recently made using a specially constructed metal cylinder three feet long and one foot in diameter, placed horizontally on a wooden base. In the center of the cylinder a watch was suspended. The observer then stood with one ear at the open end of the cylinder, and slowly moved away. The point at which he could no longer hear the tick of the watch was marked. The cylinder was then lined with coatings of paint and the test repeated with each. The results here given are averages of several readings by four observers.

Greatest Distances from End of the Cylinder at Which Tick of a Watch Can be Heard.

Metal wall ..... 40 inches.
Metal wall with sand finish paint 19 inches.
Metal wall with sponge finish paint 18 inches.
Metal wall with cork finish paint 14 inches.

The sand finish was made by spraying sand upon a "tacky" priming coat of paint and applying finishing coats over the sand. For the sponge finish a heavy paste paint containing considerable dryer was applied. This was then "stippled" by means of a sponge pressed lightly against the surface and quickly withdrawn. The cork finish was made by pressing ground cork against a "tacky" priming coat of paint and covering it with finishing coats.

The foregoing was taken from "Paint as an Aid to Proper Acoustic Conditions" by Henry

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Gardner and William Dawnie, a lecture delivered in February, 1922 before the International Association of Master Painters and Decorators, Kansas City, Mo. The lecture has been printed in pamphlet form for free distribution by the Educational Bureau of the Paint Manufacturers' Association of the U. S., Washington, D. C.

Motor Truck Storage Design Data

IN an article on "Live Loads for Motor Truck Storage" in *Engineering News-Record,* February 9, 1922, E. L. Verveer suggests for general use the following live loads per square foot for the *beams* and *girders*: 1-ton trucks, 100 lb.; 1½-ton trucks, 115 lb.; 2-ton trucks, 125 lb.; 2½ and 3-ton trucks, 150, lb.; 3½ and 4-ton trucks, 175 lb.; 5 and 6-ton trucks, 225 lb. For the *floor slab,* these loads should be increased 50 per cent. For storage of trucks of mixed capacities, 125 lb., for 1 to 3-ton trucks and 200 lb. for the others are recommended, these loads also to be increased 50 per cent for the floor slab.

Aesthetics in Highway Bridge Design

IN the *Quarterly Report,* Jan. 1, 1922, A. R. Hurst, state highway engineer of Wisconsin said; "The matter of æsthetics in highway bridge design has received much more attention of late than ever before and the time is here when the plan of every bridge designed by the state highway commission will receive careful consideration from this point of view. The necessity for good appearance is greater in a permanent structure than in a structure of temporary nature. Permanence ceases to be a virtue where an ugly structure is concerned."

The Hoover Committees

IN a recent report to President Harding Mr. Hoover reported the appointment of the following committees for the purpose of securing constructive solution to some of the more general problems that cause the blockade on housing.

COMMITTEE ON SIMPLIFICATION OF MUNICIPAL BUILDING RULES:

Ira H. Woolson, Chairman, Consulting Engineer, Nat'l Board of Fire Underwriters, New York City.

Edwin H. Brown, Architect, Minneapolis, Minn. Chairman, Committee on Small Houses, American Institute of Architects.

William K. Hatt, Professor of Civil Engineering, Purdue University, Director, National Research Council.

Rudolph P. Miller. Ex-Superintendent of Buildings, New York City, Chairman, Building Officials Conference.

J. A. Newlin, Forest Products Laboratory, U. S. Dept. of Agriculture.

Ernest J. Russell, Architect, St. Louis, Mo. Chairman, Nat'l Board of Awards for Jurisdictional Disputes in the Building Industry.

Joseph R. Worcester, Consulting Engineer, Boston, Mass.

COMMITTEE ON SIMPLIFICATION OF PLUMBING REQUIREMENTS AND PRACTICE:

George C. Whipple, Chairman, Director, School of Sanitation, Harvard University.

William C. Groeniger, President, American Society of Sanitary Engineering.

William J. Spencer, Secretary-Treasurer of Building Trades Dept., American Federation of Labor.

H. Y. Carson, Research Engineer, American Cast Iron Pipe Company, Birmingham, Ala.

A. L. Webster, Sanitary Engineer, 112 East 40th Street, New York City.

A. E. Hansen, Sanitary Engineer, 2 Rector Street, New York City.

Thomas F. Hanley, Chairman, Standardization Committee, Nat'l Association of Master Plumbers.

COMMITTEE ON CITY ZONING:

Louis A. Moses, Cleveland, Ohio, Representing the Nat'l Association of Real Estate Boards.

J. Horace McFarland, Harrisburg, Pa. Representing the American Civic Association.

Nelson P. Lewis, New York City, Representing the Nat'l Municipal League and the Nat'l City Planning Conference.

Lawrence Veiller, New York City, Representing The Nat'l Housing Association.

Morris Knowles, Pittsburgh, Pa., of the United States Chamber of Commerce.

Edward M. Bassett, New York City, Chairman of the Zoning Committee of New York.

Frederick Law Olmsted, Brookline, Mass. President of the Society of Landscape Architects.

John Ihlder, Washington, D. C., of the United States Chamber of Commerce.

COMMITTEE ON CONSTRUCTION INDUSTRIES:

Ernest T. Trigg, President Nat'l Federation of Construction Industries.

Joseph H. DeFrees, President United States Chamber of Commerce, Washington, D. C.

John Donlin, American Federation of Labor, Washington, D. C.

Alexander M. Linnett, President U. S. League of Building and Loan Associations, Newark, N. J.

Irving B. Hiett, President, Nat'l Real Estate Board, 612 Madison Avenue, Toledo, Ohio.

William Stabler, Comptroller, Metropolitan Life Insurance Company, New York City.

John H. Kirby, Houston, Texas.

Dr. J. T. Duryea, New York City.

Charles Warner, Wilmington, Del.

Richard E. Schmidt, Chicago, Ill.

Gen. R. C. Marshall, Washington, D. C.

C. F. Lang, Cleveland, Ohio.

Daniel Crawford, Jr., Philadelphia, Pa.

William L. Monroe, Pittsburgh, Pa.

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The American Architect and The Architectural Review has gratuitously set apart this section for use by The American Specification Institute.

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The Annual Winter Conference

FOLLOWING the paper presented by Mr. E. B. Wilson (reported in the previous issue of The American Architect and The Architectural Review) the Chairman introduced Professor Duff A. Abrams, of the Structural Materials Research Laboratory, Lewis Institute, Chicago.

Professor Abrams expressed interest in the purpose of the Winter Conference and stated he was glad to note that the Joint Committee report had been followed so far as the fundamental features of concrete are concerned. He called the attention of the meeting to the fact that the report of the Joint Committee is one of the greatest steps that have been taken to advance the art of concrete construction.

The most important matter that must be dealt with, according to Professor Abrams, is the control of the water content and the slump test method of determining the consistency, so far as the water ratio is involved, is one method that does not introduce very great refinements. The slump test should not be interpreted too strictly; the inspector should not reject a batch of concrete merely because the slump was an inch or two more or less than was required by the specification. The fundamental idea of the slump test is to insure the mixing of concrete of approximately the consistency required in each batch and to prevent variations from soupy concrete to dry concrete in different batches. In too many cases of actual construction work the concrete is mere soup and consequently is of very low strength and resistance.

Recently a gentleman called on the telephone, Professor Abrams said, to report that on one operation tests showed a strength of from six hundred to eight hundred pounds in fourteen days and from ten to eleven hundred pounds in twenty-eight days, the concrete being a one to four mix. Under such circumstances about twice the strengths reported should have been obtained. Answers to questions asked by Professor Abrams indicated that the cement was entirely normal and the aggregates of fairly good quality. But the concrete was "quite wet" and therein lay the cause of the trouble.

With respect to the tables for the proportioning on concrete (these tables accompany the tentative specifications of The American Specification Institute and were prepared by Professor Abrams) attention was directed to the mixtures printed in bold face type, which were intended for use on work where no tests are made and where virtually no control of the concrete mixing existed. Professor Abrams said that the use of these special tables would have a tendency to require the use of more cement than would be necessary if the proper control was exercised and, in consequence, would tend to penalize the mixer somewhat.

Professor Abrams explained that these tables are the result of about six years' work and that approximately one hundred thousand tests had been made to produce data on which the tables could be based.

A spirited discussion of the paper presented by Mr. Wilson, Professor Abrams' talk and the specifications ensued. There seemed to be an agreement that in the matter of peripheral speed of drums, in that type of mixer, specifications might be so strict as seriously to penalize the

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mixer on the work. It was suggested that the manufacturers' recommendations as to the time of mix and the peripheral speed of the mixer should be considered as machines are designed to produce certain results and it could not accomplish the best work if it was governed entirely by the specifications without consideration of these recommendations.

With respect to the time of mix of each batch, Professor Abrams said: "With reference to this matter of speed rotation of the mixer drum I may say that we made a very serious test three or four years ago along that line, using a rather small mixer, however, but one which I believe gave us results comparable to results to be secured from other mixers.

"In this test we ran the mixer exactly one minute in every case and varied the rate of rotation from eight revolutions per minute up to about thirty revolutions. The manufacturer's rating on this particular mixer was eighteen revolutions per minute, consequently our tests were carried considerably beyond the manufacturer's recommendation.

"We found that eight revolutions per minute gave us somewhat lower strength than the others and thirty revolutions per minute also gave somewhat lower strength. However, as between twelve revolutions and twenty-five revolutions there was very little room for choice. In other words, the mixing action seemed to be largely independent of the number of revolutions so long as the actual time of mixing was the same, so that it seems to me that the actual speed of a mixer, judging from these tests, is not of very great importance.

"The time element seems to be one of the important factors. As to the effect of time of mixing, we found that increasing the time of mixing beyond, say, three-quarters of a minute gave about ten per cent increase in strength each time we doubled that. In other words if we change the time of mixing from three-quarters of a minute to a minute and a half the strength increased about ten per cent. If you increase the time from one minute to two minutes the increase in strength remains about ten per cent.

"I believe that the time element is the better measure because if you put it on the revolution basis you will be penalizing the larger mixers for the reason that they do not operate at as great a number of revolutions per minute as do the smaller ones, and you involve a great deal of other difficulties that could be avoided if it were placed on a purely time basis.

"Of course this matter of mixing action varies according to the class of mixer and the nature of the concrete so it seems best to fix a more or less arbitrary time which will be satisfactory and economical and I believe the minute is about the proper period."

The Acting Executive Secretary read the report of the New York Committee of Contractors on Provisions of the Joint Committee Report as published in the January, 1922 issue of *Concrete* as it was considered that the criticism of the Joint Committee report given therein should be presented to the meeting.

Nominations for Board of Governors

In accordance with Section 2 of Article VII of the By-Laws the following members were appointed a nominating committee to propose a list of nominees for the Board of Governors:

Mr. Hugh Borland, Chairman, Mr. Franklin H. Coney, Mr. George C. Wright.

This Committee has reported to the Board of Governors the following names as their selection of nominees:

Mr. Ralph W. Yardley, Mr. R. Jarvis Gaudy, Mr. Chester L. Post, Mr. Frank A. Randall, Mr. Gardner C. Coughlen, all of whom are now serving as the Board of Governors.

Section 3 and Section 4 of Article VII of the By-Laws say:

Sec. 3. Any group of thirty (30) members may prepare a list of nominees for the Board of Governors at least thirty (30) days before the first Monday of May of each year.

Sec. 4. All lists of nominees for the Board of Governors shall be in the office of the Executive Secretary thirty (30) days before the first Monday of May of each year and the Executive Secretary shall mail ballots, containing the names of all candidates, to all members not later than ten (10) days thereafter.

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REFORM CODE FOR BUILDING TRADES

A decree to be filed in Court ends limit on production, favoritism and abuses delaying housing operations

(Reprinted from The New York *Tribune*)

PROGRESS toward wiping clean all the evil practices existing in all branches of the building trade and the housing situation generally was made at a conference between Attorney General Daugherty, United States Attorney William Hayward, of New York, and other representatives of the government and the interests involved. As a result of the meeting the executive heads of the International Organization of Bricklayers, Masons and Plasterers, which embraces all the local unions, taking in a membership of more than 100,000, signed a consent to the entry of a court decree affecting the entire national organization and all its local unions.

The decree, to be entered in the United States District Court for the Southern District of New York, lays down and adopts four basic principles:

1. There is to be no limit to the productive capacity of the individual workman within the working day or any other given time.

2. There is to be no limit upon the right of the employer to purchase his materials wherever and whenever and from whomever he may choose, whether those materials be union-made or otherwise.

3. There is to be no favoritism shown by organized labor toward employers or trade associations or contractors' associations and no discriminations are to be indulged in against the independent employer who may not be a member of such an organization.

4. The labor organization is not to be used or permit itself to be used by material men or contractors or sub-contractors as an instrument for the collection of debts or enforcement of the payment of alleged claims.

"THE first of these principles," said a statement from Mr. Daugherty's office, "is directed against a vicious practice which is more or less an outgrowth of the cost-plus system which prevailed during the war period. Various local unions of this and other labor organizations have from time to time tacitly and often openly limited their men in the quantity of the work to be performed by them within a given time. Some locals have enforced the rule that a bricklayer must lay only so many bricks an hour or a mason set only a certain quantity of stone a day, and so on down the line. It is gratifying to note that the executive heads of this national labor organization have for many years condemned this practice. It is a heritage of the war period when unscrupulous contractors operating under the cost-plus system were perfectly content to have fifty men on a job where half or one quarter of the number could do the work.

"Labor has for years contended that it is not a commodity and not to be regarded as a commodity. That principle has now been incorporated in our basic law and is recognized and expressed in the first sentence of the Clayton act.

"Nothing in the decree prohibits the regulation of the hours or conditions of labor. It does, however, unqualifiedly forbid any concerted effort at curtailment of production by any such limitations upon the productive capacity of the individual. In a word, it eliminates the penalizing of ability and the discouragement of efficiency.

"THE second is directed against the various discriminations which have been indulged in by labor organizations engaged in the building trades, whereby they sought to restrict a builder from purchasing and importing the finished materials from the sources of their production. By way of example, for many years a rule has prevailed that stone would not be set by members of this union if an employer or builder bought stone finished and dressed at the quarry and imported it to the place where it was to be used in construction work. In other words, in case of construction work in all of the larger cities of the land the labor union required that the stone be imported in the rough and dressed and finished locally by union labor. In addition to that, various other restrictions have been imposed by labor organizations not only upon materials that were non-union made, but likewise even though such materials were union made, which restrictions sought to dictate to the builder the source and the locality from which he should purchase his materials.

"THE third is directed against a series of nation-wide abuses which have assumed various forms and aspects in the relations between organized labor and trade associations. Innumerable instances have been found in the various building trades where, in consideration of some bonus or other inducement offered to the labor organization, the latter would in turn agree to grant a preference or to furnish some co-operation to the trade association member as against his independent competitor.

"Take the case that arose recently in the New

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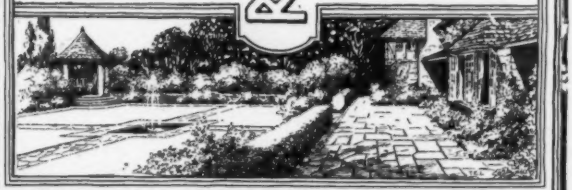

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York district by way of example. An individual had several millions of dollars available for the erection of four hundred model homes which he was then planning right in the vicinity of New York. He was not a member of the Tile Contractors' Association. Under the agreement, however, that then prevailed between the contractors' association and a local of the labor organization, the materials had to be purchased from the same contractor who supplied his labor. This builder found himself in a position, therefore, that he could not secure the necessary labor if he made any attempt to purchase his tile other than as directed under the terms of this agreement. As a result the four hundred homes were never built. Labor itself suffered the real loss.

"These general practices of preferences and special agreements made for the benefit of contractors' associations have grown into a veritable national system in the building trades. The inevitable effect was not only to eliminate all competition in the field involved but of necessity to increase the number of unemployed and strictly to create an unlimited monopoly in the hands of these trade associations.

"THE fourth strikes at what has likewise become a general practice for contractors and builders to use labor unions as an instrument for the collection of their debts. Instances have been reported to the department from both Chicago and New York, and no doubt the practice prevails in the other large cities, where the labor union refused to work on the completion of a job where they had been compensated fully and had every assurance of future compensation only because some previous owner of the same building had defaulted in a payment to some material man.

"In conclusion, it may fairly be said that this decree incorporates a set of principles which make for independence on the part of the employer in the purchase of his materials whenever and wherever he may desire. It frees the employer from the shackles that have been thrown around him by these numerous illegal restrictions as to the quantity of work to be done in a given time irrespective of whether his materials are or are not union made. On the other hand, it recognizes all the lawful aims or objects of labor unionism. Finally, and most important, it gives the public a chance."

Preliminary Examination, Rotch Travelling Scholarship

THE preliminary examinations for the Rotch Travelling Scholarship will be held at the office of the Secretary, C. H. Blackall, 20 Beacon Street, Boston, on Monday and Tuesday, April 10 and 11, 1922, at 9 A. M., to be followed by the sketch for Competition in Design on Saturday, April 15. The successful candidate will receive annually for two years an amount which it is hoped will not be less than $1,400 per year, and may be more, depending upon the funds, this amount to be expended in foreign travel and study during two years.

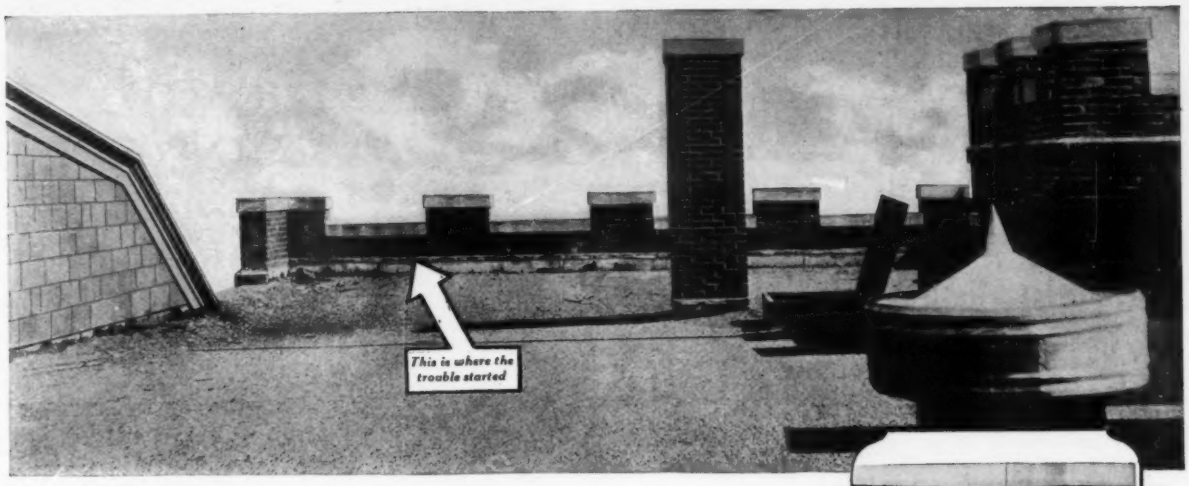
Candidates must be citizens of the United States, be under thirty years of age and must have been engaged in professional work during two years in the employ of a practicing architect resident in Massachusetts. Holders of a degree from a recognized architectural school may present their certificates in lieu of the preliminary examinations.

Candidates are requested to register at the office of the Secretary as long before the examinations as practicable.

Thomas Hastings, Royal Gold Medallist

THE ARCHITECTS' JOURNAL of London, commenting on the recent nomination of Thomas Hastings as Royal Gold Medallist, states as follows:

The nomination of Thomas Hastings as the Royal Gold Medallist of the current year will increase the pleasure of two continents. Mr. Hastings is an American of the Americans, but his work is almost as well known, and is quite as much esteemed, by French and by British architects as it is by his fellow-countrymen. He is the spiritual descendant in a direct line from the late Charles Follen McKim, in whose office he served, absorbing its best traditions, for two years and a half, having been previously a distinguished pupil of Jules André's at the Paris Beaux-Arts. If he had done no other work in architecture, he would deserve the medal for his extraordinary services to architectural education. He has a passion for scholarship in his art, and has probably done more than any other living American to promote it, which is saying a great deal. He is one of the founders of the American Society of Beaux-Arts Architects, was president of The Architectural League of New York, and is an active member of the National Academy of Design, of the American Academy of Arts and Letters, and of several other societies of similar character. Needless to say, scholarship is unfailing in the many stately buildings with which he has been associated as a member of the firm of Carrère and Hastings. The firm's works embrace every type of building—public and educational, churches, office buildings, country estates, city residences— and with John M. Carrère, Mr. Hastings designed the architectural portion of the Lafayette monument erected in the Place du Carrousel, Paris, and was thereafter made a Chevalier of the Legion of Honor. The gold medal will come to him in the sixty-second year of his age.



Don't Blame the Roof when Flashings Go Wrong!

Many a good roof is held responsible for leaks that are caused by faulty flashings.

An interesting case of such misplaced blame is that of the Barrett Specification Roof on the State Armory at St. Johnsbury, Vermont, laid in 1916.

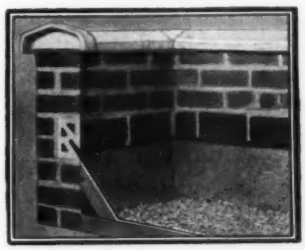
Some months ago, when the architect's plans for a new armory at Newport, Vermont, were submitted to the Adjutant General of the State, he refused to approve them because they called for a Barrett Specification Roof. In explanation of his refusal, he stated that the Barrett Specification Roof on the St. Johnsbury Armory had been leaking badly for several months.

The architect immediately investigated the trouble at St. Johnsbury. What he found there is shown by the illustrations. The roof itself was in perfect condition.

But the flashings, which were the usual metal type, were in sorry shape. All but two joints of the base-flashings had pulled apart and the counter-flashings in many places had broken away from the wall.

The settling of the building, and contraction and expansion due to changing temperatures, had made the flashings absolutely worthless. No wonder the "roof" leaked!

When these facts and the photographs were brought to his attention, the Adjutant General promptly approved a Barrett Specification Roof for the new Armory at Newport, Vt., but insisted that Barrett Flashings be used instead of metal.



The new Barrett Flashings. Note how slot in flashing-block takes care of expansion and contraction.

For permanent flat-roof buildings Barrett Specification Roofs are the choice of leading architects and engineers. This popularity is due to an enviable record for durability and economy. There are many roofs of this type that have been in service forty years or more and are still in good condition.

Close-up showing condition of metal flashings on St. Johnsbury Armory. No wonder the "roof" leaked!

Barrett Specification Roofs are moderate in first cost and are guaranteed *by a Surety Company Bond*, against all roof repair expense,—Type "AA" for 20 years; Type "A" for 10 years.

No more flashing troubles!

The new Barrett Flashings definitely solve the problem of permanent waterproof flashing construction. They are fully described in the Barrett Flashing Handbook and Flashing Service Sheets, copies of which will be sent to architects, engineers and contractors requesting same on business letterhead. Please address our nearest office.

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XUM

U. S. Exposition Building

THE contract for the construction of the exposition building to house the exhibits of the United States at the great Brazilian Exposition next September has been awarded to Dwight P. Robinson & Co., New York. Representatives of this company and Frank L. Packard, architect, of Columbus, Ohio, who will design the building, sailed recently for Brazil to begin the work at once.

The exposition will open at Rio de Janeiro on September 7 and will commemorate 100 years of Brazilian independence.

It was recently announced at the White House that the American building would be of permanent construction and so designed as to permit of its being converted into an embassy for this country's diplomatic representative after the close of the exposition.

Building Construction Courses

BUILDING Construction Courses were started four years ago in The College of the City of New York, New York City, with a registration of 20, and this term it has gone up to 160, and is expected to go over 200 this coming term. There are eight courses, as follows: 1—Materials of Building Construction, 2—Plan Reading and Estimating, 3—Engineering Design, 4—Architectural Engineering, 5—Advanced Architectural Engineering, 6—Advanced Estimating and Specifications, 7—Elementary Drafting, 8—Structural Steel Drafting. The series are repeated every September and February, but each time one or two new courses are added.

The first course is one of great interest to any one connected with building construction, and takes up a phase of the subject which is, unfortunately, very much neglected, i. e., the practical study of the handling of materials of building construction from the time of purchase to the time of placement in the building. This course has attracted architects, builders, foremen, inspectors and engineers.

Patching the Parthenon

TREPIDATION has seized the lovers of the Parthenon. It has scaffolding about it. On its north side the fallen columns and the architrave are to be re-erected, and Reuter's Agency has flashed round the civilized world the thrilling rumor that a compound of limestone and cement will be substituted for the missing blocks of marble. Although the Parthenon lost long ago its character as a temple, whether to St. Sophia, to Athena, to Christian saint, or to Mohammed, its remains are sacrosanct even to those who have seen no more than a picture of them; and, all the world over, those who passionately esteem the Parthenon as the supreme model of architecture of the Western type—for are not the Taj Mahal and Santa Sophia rival but Oriental deities?—are trembling lest the mingling of cement with marble should profane or disfigure irremediably this fragmentary but incomparably precious temple of art.—*The Architects' Journal*, London.

Which Trades Need Apprentices Most

THE Building Trades Employers' Association of New York City recently made a survey of the employment situation in the building trades throughout the country. Among other interesting data it gives a list of the building trades in the order, as one might say, of their scarcity, showing the plasterers in greater demand than any other trade and putting concrete laborers, the supply of whom greatly exceeds the demand, at the bottom of the list.

Texas Chapter, A. I. A., Elects New Officers

AT a recent meeting of the Texas Chapter of the American Institute of Architects, the following officers were elected: President, Herbert M. Greene, 620 North Texas Building, Dallas; Vice-President, Carl V. Seutter, 424 Moore Building, San Antonio; Secretary, Clarence C. Bulger, 4419 Junius Avenue, Dallas; and Treasurer, Alfred C. Finn, 202 Foster Building, Houston.

Bridge of Sighs and Old Prison to Become Art Center in Venice

ONE more relic of olden days in Venice is about to be transformed. The historical "Carceri di San Marco," or Prisons of St. Mark, are never to be used as prisons any more.

The Venetians have held a solemn meeting and adopted a resolution declaring that the prisons, centers of medieval tyrannical justice and even used for criminals till very recently, though the dungeons and underground cells have not been used for anything but the curiosity of tourists since the Austrian Domination, will henceforth be a center of culture.

Only details of their new use have to be settled. Some prominent citizens vote for their being used as concert halls for good, popular performances, of which Venetians are very fond. Others vote they should be the seat of the famous Artistic Club of Venice, a club worthy of the taste and culture of Venetians in general. The question of choice remains open while the prisons are being thoroughly cleaned and set in order.

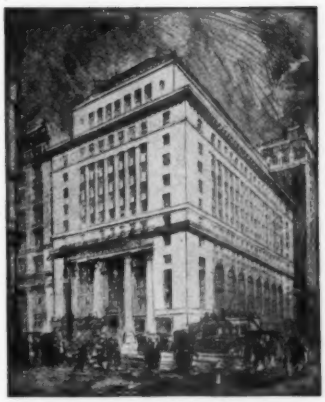
To Foresighted Architects

THE architectural profession faces a period of great opportunities. Building on a large scale to remedy the shortage caused by the war must begin soon. The foresighted architect serves most and profits most in such a period.

S. W. Straus & Co. are ready to co-operate to further legitimate, necessary, profitable new construction.

We will purchase construction loans in amounts of $500,000 upward, in the form of first mortgage bond issues.

We render a broad and thoroughgoing service to architects, engineers, and builders.



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XUM

PERSONALS

Ernest F. Coe, landscape architect, announces the removal of his office to 951 Forest Road, New Haven, Conn.

Philip L. Goodwin, architect, announces the removal of his office to 4 East Fifty-third Street, New York City.

Adden & Parker, architects, announce the removal of their offices to 177 State Street, Boston, Mass.

Beacham & LeGrand, architects, announce the removal of their offices to 211 Bruce Building, North Street, Greenville, S. C.

N. A. Habersack, architect, has moved his office to 1 East Fordham Road, New York City, and would be pleased to receive manufacturers' catalogs and samples.

It is announced that G. A. Mueller, architect, has moved his offices from his residence, 329 Garfield Avenue, to 1509 Stroh Building, Detroit, Mich.

Frank Irving Cooper Corporation, architects and engineers, formerly at 33 Cornhill, Boston, Mass., have moved into new offices at 172 Tremont Street, that city.

Clarence C. Palmer, architect, wishes to announce the removal of his architectural office from the Mutual Building to Rooms 120, 121 and 122, Professional Building, New Britain, Conn.

W. Whitehill, architect, announces the removal of his office to the Buckley-Newhall Building, Forty-first Street and Sixth Avenue, New York City.

Announcement is made that George H. Boyer, architect, has opened architectural offices in the Farmers Trust Building, Lebanon, Pa. Manufacturers' samples and catalogs are desired.

Phillip Theo. Drotts, architect, is now located in Rooms No. 621—623, Reliance Building, Kansas City, Mo. Manufacturers' catalogs and samples are desired.

Warren & Clark, architects, formerly located at 108 East Twenty-ninth Street, are now practicing at 15-17 West Forty-fourth Street, New York City.

Donald F. Innes and C. S. Levy, architects, 176 South Main Street, Wilkes Barre, Pa., have expressed their desire to receive catalogs and samples of building materials.

William F. Pagels, architect, has moved his office from his home at 1412 Berteau Avenue, Chicago, and is now practicing his profession in offices at 1128 Argyle Street, that city.

Announcement is made that William L. Charr, architect and engineer, has established his new offices at 149 South Fourth Street, Philadelphia, Pa. Manufacturers are requested to send catalogs and samples.

Mr. and Mrs. Richard P. Raseman have recently returned from Italy and France, where they have been continuing their architectural studies, and their present mail address is 1302 Penobscot Building, Detroit, Mich.

Announcement is made that Giles Milton Smith has been admitted to an interest in the firm of Bigelow & Wadsworth, architects, 3 Hamilton Place, Boston, Mass. Mr. Smith has been with this firm for a number of years.

The State Board of Architecture, California, has recently granted certificates to practice architecture to the following: Roy L. Smith, 804 Higgins Building, Los Angeles; J. W. F. Binderheim, with John C. Austin, Los Angeles and O. Lincoln Rogers, San Diego.

H. F. Wendle, architect and engineer, announces that he has moved his office from 48 West Fourth Street to the Goldenberg Building, 341 Pine Street, Room No. 10, Williamsport, Pa., and is desirous of receiving manufacturers' samples and catalogs.

It is announced that Samuel Hannaford & Sons, architects, who for 32 years have been located on the sixth floor, the Hulbert Block, Cincinnati, Ohio, have removed their architectural office to the tenth floor, Dixie-Terminal Building, that city.

Albert B. Baumann, successor to Baumann Brothers, architects, announces that he has moved into his own office building at 813½ Market Street, Knoxville, Tenn., and has associated with him his son, A. B. Baumann, Jr., under the firm name of Albert B. Baumann and A. B. Baumann, Jr., architects.

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STUCCO has deservedly become a most popular type of construction. One essential of good stucco is that it be permanent.

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ANCHORS—See Bolts

ARCHITECTURAL IRON WORK—See also Ornamental Metal Work

The Builders Metal Products Co., Cleveland, Ohio.
414. *Hall Patent Steel Stairs.* Detail drawings, specifications for and description of a strongly built, rigid steel stairway. 3 pp. Ill. 7¾ x 9 in.

The Hughes-Keenan Company, Mansfield, Ohio.
230. *Catalog No. 5.* Contains descriptions of pressed Steel Stairs, Ornamental Iron, Fire Escapes, Steel Door and Window Frames, Pressed Steel Toilet Partitions. 65 pp.

ASH HOISTS—See also Hoists

Gillis & Geoghegan, 545 West Broadway, New York, N. Y.
320. *General Catalogue.* Contains specifications in two forms, (1) using manufacturer's name, and (2) without using manufacturer's name. Detail in ¼ in. scale for each telescopic model and special material handling section. Fully illustrated with photographs of actual installations and descriptive matter of same. 20 pp., 2 colors, 8½ in. x 11 in.

ASH RECEIVERS

Sharp Rotary Ash Receiver Corporation, 396 Bridge St., Springfield, Mass.
205. *Catalogue E.* Booklet describing the Sharp Rotary Ash receiver with illustrations of houses in which the furnaces are equipped with this device. 24 pp. Ill. 6 x 9¼ in.
331. *Catalogue F.* A Booklet for architects and builders telling what the Sharp Rotary Ash Receiver is and what it does; together with tables of dimensions for installation. 8 pp. Ill. 6 x 9¼ in.

ASBESTOS—See also Lumber, -Roofing

Johns-Manville Co., New York, N. Y.
372. *Catalog No. 304.* A treatise on the manufacture and uses of Johns-Manville Building Materials made of asbestos and mastic for all places exposed to fire or corrosion. 100 pp. Ill. in colors. Board covers. 8½ x 11 in.

ASBESTOS ROOFING—See also Roofing

The Philip Carey Co., Lockland, Cincinnati, Ohio.
380. *Asbestos versus Fire.* Booklet in colors. Contains information about asbestos; data on Carey Prepared and Built-up Asbestos Roofing; pictures of buildings on which they have been used. 15 pp. Ill. 6 x 9 in.

BOLTS

National Lead Company, 111 Broadway, New York, N. Y.
272 *Cinch Bolt Booklet.* An illustrated booklet of Cinch Bolt Specialties. 20 pp. 3½ x 6¼ in.

BRICK

American Face Brick Association, 110 South Dearborn St., Chicago, Ill.
103. *The Story of Brick.* Contains the history of, and basic requirements of building brick, artistic, sanitary and economic reasons, comparative costs, and fire safety with photographs and drawings, and illustrates ancient and modern architectural works of note in brick. Size 7 x 9¼ in. 56 pp.
137. *A Manual of Face Brick Construction.* The history of brick making, types of face brick, showing details of construction for walls, chimneys and arches. Details of use of tile and brick Construction and different types of bonds are given. A series of plans and elevations of small brick houses, descriptions, useful tables and suggestions are illustrated and described. Size 8½ x 11 in. 116 pp. Price $1.00.
155 *The Home of Beauty.* A booklet containing fifty prize designs for small brick houses submitted in national competition by architects. Texts by Aymar Embury II, Architect. Size 8 x 10 in. 72 pp. Price 50 cents.
371. *Architectural Details in Brickwork. Series One, Two and Three.* Each series consists of an indexed folder case to fit standard vertical letter file, containing between 30 and 40 half-tones in brown ink on fine quality paper. These collections are inspiring aids to all designers. Sent free to architects who apply on their office stationery; to others, 50 cents for each series.

BUILDING CONSTRUCTION—See also Garage Construction

Blaw-Knox Company, Pittsburgh, Pa.
F348. *The Blaw System for Building Construction. Catalog 18.* A valuable treatise on formwork for reinforced concrete flat slabs, relieved slabs, rib slabs and beams and joists. 39 pp. Ill. 7½ x 10½ in.

Concrete Engineering Co., Omaha, Neb.
347. *Handbook of Fireproof Construction.* An illustrated treatise on the design and construction of reinforced concrete floors with, and without suspended ceilings. The Meyer Steelform Construction is emphasized and tables are given of safe loads for ribbed concrete floors. 40 pp. Ill. 8½ x 11 in.

The Foundation Company, 120 Liberty St., New York, N. Y.
F335. *Industrial Plant Construction.* A series of loose-leaf circulars describing complete plants built by this company. Ill. 8½ x 11 in.

Koehring Machine Co., Milwaukee, Wis.
F347. *Standardized Concrete.* This excellent treatise by E. A. Van Vleck, architect, contains authoritative information on proportioning, mixing and placing concrete. 20 pp. Ill. 8½ x 11 in.

McKeown Bros. Co., 21 East 40th St., New York, N. Y.
434. *Clear Floor Space.* A folder showing uses and advantages of McKeown "Lattis" and "Bowstring" long span wood roof trusses. 4 pp. Ill. 8½ x 11 in.

Northeastern Construction Company, 101 Park Ave., New York, N. Y.
415. *Economy from Organized Effort.* A book dealing with scientific organization for construction work with diagram showing curve of costs of labor, materials and completed structures from 1870 to 1922. 40 pp. Ill. 6 x 9 in.

Truscon Steel Company, Youngstown, Ohio.
317. *Truscon Floortyle Construction. Form D-352.* Contains complete data and illustrations of Floretyle installations. 16 pp. Ill. 8½ x 11 in.
318. *Truscon Standard Buildings. Form D-393.* Describes Truscon Standard Steel Buildings, with diagrams, illustrations of installations, descriptive matter and list of users. 48 pp. Ill. 8½ x 11 in.
319. *Truscon Building Products. Form D-376.* Contains a brief description of each of the Truscon Products. 112 pp. Ill. 8½ x 11 in.
320. *Modern School Construction. Form D-396.* Contains illustrations of schools, with typical elevations, showing advantages of Truscon Products for this construction. 16 pp. Ill. 8½ x 11 in.

BUILDING HARDWARE—See Hardware

CABINETS

Hess Warming & Ventilating Co., 1204-7 Tacoma Building, Chicago, Ill.
386. *The Hess Sanitary Medicine Cabinet Lockers and Mirrors.* Description with details of an enamelled steel medicine cabinet for bathrooms. 20 pp. Ill. 4 x 6 in.

CASEMENTS—See Doors and Windows

CEILINGS, METAL

The Edwards Manufacturing Company, Cincinnati, O.
193. *Pamphlet* of 32 pages describing metal ceilings and wainscoting. Well illustrated, with list prices and rules for estimating. 7 x 10 in.

CEMENT

Krider Building Material Co., Inc., 422 East 3rd St., New York, N. Y.
418. *Durastone Brand Cement.* A description of a cement which matches any stone or marble, any color or texture. Can be cast in molds and also used for walls or plain surfaces. Illustrations are given of beautiful work executed with this material. 12 pp. 8½ x 11 in.

CHUTES—See also Laundry Equipment

Cutler Mail Chute Co., Rochester, N. Y.
294. *The Cutler Mail Chute. Model F.* Describes the Cutler Mail Chute in its standard form, known as Model F. Contains data for preparatory work to be done before installation. 16 pp. Ill. 4 x 9¼ in.

Edwin A. Jackson & Bro., Inc., 50 Beekman St., New York.
171. Booklet showing general construction and size of chutes to receive coal. Two types are built into the foundation wall with glass panel in place of cellar window; another type is placed flush with the ground, and is placed adjacent to wall, or can be placed near the street curb. Size 3½ x 6¼ in. 16 pp.

XUM

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